PHILIPS

VARI*LITE®

VL1100™ ERS Luminaires



USER'S MANUAL

VL1100™ ERS Luminaire User's Manual

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How To Obtain Warranty Service

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI❋LITE® product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548) or +1-214-647-7880 or via e-mail at entertainment.service@philips.com request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Fill out the RMA form included at the end of this manual and place in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

Vari-Lite
Attention: Warranty Service (RMA#: __________________)
10911 Petal Street
Dallas, Texas 75238 USA

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

Compliance Notice

FCC This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

CE

Declaration of Conformity

We declare, under our sole responsibility, that this product complies with the relevant clauses of the following standards and harmonized documents:

Safety:

(by Low Voltage Directive 2006/95/EC)

EN60598-1: 2000

EN60598-2-17: 1989/A2:1991

Electromagnetic Compatibility:

(by Council Directive 89/336/EEC)

EN61000-6-4: 2001

We certify that the product conforms to the protection requirements of Low Voltage Directive 2006/95/EC and Council Directive 89/336/EEC (EMC).

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

CAUTION advising of potential damage to product.

WARNING advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE

1. VARI❋LITE® luminaires have been designed for use with specific lamp types. The VL1100 ERS luminaire requires a specific type of Oshio or Philips lamp. Installing another type of lamp may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Note distance requirement from combustible materials or illuminated objects for VARI❋LITE® luminaires.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1. VARI❋LITE® luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI❋LITE® equipment.
3. Servicing to be performed by qualified personnel only.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION

1. Many VARI✻LITE® luminaires use a lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

WARNING:
INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

WARNING:
RF INTERFERENCE

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

ARC LAMP CHARACTERISTIC CONSIDERATIONS

1. Arc lamps require a period of time to relight after a power interruption or a severe voltage dip. In some cases, lamp will automatically relight after it has cooled depending on Lamp Power-Up State configuration setting.
2. Burning position is Universal.

Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:

VORSICHT - weist auf möglichen Produktschaden hin.

WARNUNG - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

WARNUNG:
HINWEISE ZUM FEUERSCHUTZ

1. VARI✻LITE®-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Lampentyps. Achten Sie auf den Lampentyp (specific type of Oshio or Philips lamp), bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI✻LITE®-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK

1. VARI✻LITE®-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI✻LITE®-Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG

1. Viele VARI✻LITE®-Scheinwerfer verwenden die Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.
2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettschirme müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem flusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

WARNUNG:
HF-INTERFERENZ

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

BESONDERHEITEN VON BOGENLAMPEN

1. Bogenlampen benötigen eine gewisse Zeitdauer, um nach einem Stromausfall oder einem Spannungsgefälle wieder aufzuleuchten. In einigen Fällen wird die Lampe nach Abkühlung automatisch wieder aufleuchten, je nach der Systemkonfigurationseinstellung des Lampeneinschaltungsstatus.
2. Die Brennposition ist Universal.

Notes de sécurité

Avant de procéder à l’installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l’installation et l’utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :

ATTENTION Ce symbole annonce que l’appareil risque d’être endommagé.

AVERTISSEMENT Ce symbole annonce qu’il y a risque d’accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES , LES INCENDIES, L’EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES

1. Les luminaires VARI❋LITE® ont été conçus pour être utilisés uniquement avec certaines type de lampes. Vérifier le type de lampe (specific type of Oshio or Philips lamp) avant de remplacer les lampes. L’installation d’un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI❋LITE®.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES

1. Les luminaires VARI❋LITE® sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l’humidité risque d’endommager le luminaire.
2. Débrancher l’appareil avant de procéder à la révision de tout matériel VARI❋LITE®.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

1. Plusieurs luminaires VARI✱LITE® utilisent une lampe qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

AVERTISSEMENT:
INTERFÉRENCE RF

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

CONSIDÉRATIONS DES CARACTÉRISTIQUES DE LAMPES À ARC

1. Après une interruption de courant ou une baisse importante de voltage, les lampes à arc mettent du temps avant de se rallumer. Dans certains cas, la lampe se rallumera automatiquemet après s'être refroidie. Cela dépend de la manière dont le système est réglé pour le statut de mise en marche de la lampe.
2. La position Brûler est Universelle.

Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:

CUIDADO, indica posibles daños al producto.

ADVERTENCIA, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO

1. Las luminarias VARI❋LITE® han sido diseñadas para ser usadas solamente con algunas lámparas. Tome nota del tipo de lámpara (specific type of Oshio or Philips lamp) antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI❋LITE®.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO

1. Las luminarias VARI❋LITE® están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI❋LITE®.
3. El servicio debe ser realizado solamente por personal calificado.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA

1. Muchas luminarias VARI✻LITE® usan un tipo de lámpara que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

ADVERTENCIA:
INTERFERENCIA RF

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

CONSIDERACIONES SOBRE LAS CARACTERÍSTICAS DE LA LÁMPARA DE ARCO

1. Las lámparas de arco requieren un período de tiempo para volver a iluminarse después de una interrupción de energía o de una severa caída de voltaje. En algunos casos, la lámpara se volverá a iluminar en forma automática después que se ha enfriado dependiendo de la configuración del sistema de energía de la lámpara.
2. La posición de encendido es universal.

安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。

注意：製品に損傷を与える危険性があります。

警告：人身事故につながる危険性があります。

感電、火災、UV 放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：

火災の発生を防ぐためのヒント

1. VARI✻LITE® 照明器具は、ランプを使用するように設計されています。ランプを交換する際は、ランプの種類 (など) を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI✻LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：

感電を防ぐためのヒント

1. VARI✻LITE® 照明器具は、乾燥した環境で使用するように設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI✻LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

警告：

過度の **UV** 放射にさらされないためのヒント

1. VARI✳LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

警告：

人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

警告：

RF 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

アーク灯の特性

1. 停電後または大きな電圧ディップ後にアーク灯を再点灯する場合は、しばらく時間をおくようにしてください。Lamp Power-Up State）システム設定によっては、温度が下がったときに自動的に再点灯される場合もあります。
2. アーク灯は点光源です。

Table of Contents

Introduction

About This Manual 1
Text Conventions 2
Additional Documentation 2
Customer Service 2

Chapter 1. Description

Features
Standard Features 6
Model Specific Features 6
Components
Included Items 8
Luminaire Overview 9
Dimmer Model Overview 10
Arc Model Overview 11
Accessories
VL1100 ERS Replacement Items/Accessories 12

Chapter 2. Installation

Power and Data Cabling Requirements
AC Power 14
Current vs. Voltage 14
Lamp Power 15
Data Cables 18
Recommended Cable Types/Manufacturers 19
DMX Termination Connector 20
Loopback Connector 20
Installation Procedures
Installing Lamp (Incandescent Models) 21
Installing Lamp (Arc Models) 23
Accessory Frame Holder 25
Hanging the Luminaire 26
Hanging the Ballast (Arc Models Only) 28
Connecting Data and Power 30
Powering Up
Power-Up and Configuration Overview 31
Standard Power Up Procedure 32
Power Up and Configuration Procedure 33
Align Lamp For Maximum Beam Irradiance 34
Addressing
Program Starting Address 35
Program Starting Address Without Calibrating 35

Chapter 3. Operation

DMX Operation
Channel Mapping 38
Control Channel Functions 40
DMX Data Display 41
DMX Mapping
Color Mixing 42
Rotating Gobo Wheel 43
Index/Rotation 43
Shutter Mechanism 44
Luminaire Timing
Timing Channel Information 45
Updating Software
USB Download and Programming Luminaires 53
Transferring Software From Luminaire to Luminaire 54

Chapter 4. Menu System

Menu Operation
What Is the Menu System? 58
Menu Controls Operation 58
Menu Default State 59
Menu Shortcuts 59
Menu Functions
Menu System Overview 60
Menu System Function Chart 61
Menu Function Definitions 64
Self Tests
Running Parameter Tests 66

Appendix A. Troubleshooting and Maintenance

Troubleshooting
Error Messages 70
Troubleshooting Guide 71
Routine Maintenance
Cleaning Optical Lenses and Gobos 72
Rotating Gobo Replacement 72
Lamp Replacement 74

Appendix B. Technical Specifications

Mechanical 75
Optical 75
Operational 76
Arc Ballast Unit (VL1100™ Arc Models Only) 78
Input 78

Output 78
Weight and Dimensions 78

Notes

Introduction

About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for the VARI✻LITE® VL1100™ Ellipsoidal Reflector Spotlight (ERS) luminaire. Familiarizing yourself with this information will help you to get the most out of your product.

WARNING: It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

This manual covers the following models:

Model	Part Number	Source	Integral Dimmer	Shutter	Iris	Fixture Color
VL1100 TS	20.9664.0001.02	Incandescent	No	Yes	No	Black
VL1100 TS	20.9664.0001.02.02	Incandescent	No	Yes	No	White
VL1100 TI	20.9664.0001.03	Incandescent	No	No	Yes	Black
VL1100 TI	20.9664.0001.03.02	Incandescent	No	No	Yes	White
VL1100 AS	20.9664.0001.12	Arc	Mechanical	Yes	No	Black
VL1100 AS	20.9664.0001.12.02	Arc	Mechanical	Yes	No	White
VL1100 AI	20.9664.0001.13	Arc	Mechanical	No	Yes	Black
VL1100 AI	20.9664.0001.13.02	Arc	Mechanical	No	Yes	White
VL1100 TSD	20.9664.0001.22	Incandescent	Electronic 115V	Yes	No	Black
VL1100 TSD	20.9664.0001.22.02	Incandescent	Electronic 115V	Yes	No	White
VL1100 TID115	20.9664.0001.23	Incandescent	Electronic 115V	No	Yes	Black
VL1100 TID115	20.9664.0001.23.02	Incandescent	Electronic 115V	No	Yes	White
VL1100 TSD230	20.9664.0001.32	Incandescent	Electronic 230V	Yes	No	Black
VL1100 TSD230	20.9664.0001.32.02	Incandescent	Electronic 230V	Yes	No	White
VL1100 TID230	20.9664.0001.33	Incandescent	Electronic 230V	No	Yes	Black
VL1100 TID230	20.9664.0001.33.02	Incandescent	Electronic 230V	No	Yes	White

Text Conventions

The following styles and meanings are used throughout this manual:

Style	Meaning
[Button]	Front panel button. Example: Press [Menu].
[Up] / [Down] arrows	Press either [Up] or [Down] arrow button at Menu Display.
MENU	LCD Menu Display read-out. Example: Press [Up] / [Down] arrows until LAMP appears.

Additional Documentation

A service manual for Authorized VARI✻LITE® Service Centers and technicians of the VL1100 ERS luminaire is available in electronic (PDF) format:

- VL1100 ERS Luminaire Service Manual (02.9664.0010)
  - Testing, Troubleshooting, Component Replacement and Illustrated Parts Breakdown.

Note: Performing maintenance procedures may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the product shipping package for more information.

For more information regarding DMX512 systems, refer to the following document available from United States Institute for Theatre Technology, Inc. (USITT):

- Digital Data Transmission Standard for Dimmers & Controllers plus AMX 192 Analog Multiplex Data Transmission Standard for Dimmers & Controllers.

  USITT
  6443 Ridings Road
  Syracuse, New York 13206-1111 USA
  Tel: (800) 938-7488 Fax: (866) 398-7488 / www.usitt.org

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

For assistance in your area, call the dealer from which your product was purchased.

or

Contact an Authorized Service Center.

or

Contact the Vari-Lite Customer Service Department, 9am -6pm CST Monday through Friday, at the following:

Phone: 1-877-VARI-LITE (1-877-827-4548) or +1-214-647-7880

E-mail: entertainment.service@philips.com

Additional Resources

For additional resources and documentation, please visit our website at www.vari-lite.com and follow the Support link.

Notes

CHAPTER 1.

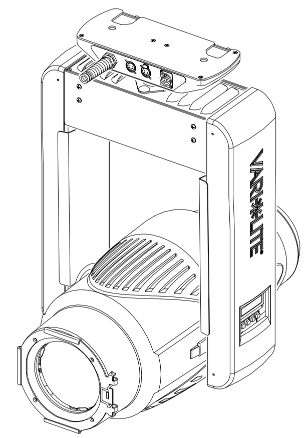
Description

This chapter contains descriptions of luminaire features and components, along with a list of accessories which are available.

- **Features**
- **Components**
- **Accessories**

Features

Standard Features



VL1100 Ellipsoidal Reflector Spotlight (ERS) luminaires have the following standard features:

- Automated zoom optics system.
- Crossfading CYM color system.
- Diffusion system.
- Six-position rotating gobo wheel (five rotatable, indexable gobo positions and one open gobo position).
- Repositional pan/tilt system via 3-phase stepper motors.
- High-frequency drivers to reduce stationary noise when luminaire is in parked position.
- Control by DMX512 protocol.

Note: Additional specifications and information is found in "Technical Specifications" on page 75.

Model Specific Features

Each individual configuration has the following specific features:

VL1100 TS Luminaire (20.9664.0001.02 - Black / 20.9664.0001.02.02 - White)

- 1000W Tungsten Halogen lamp source.
- Four-blade shutter framing system.

VL1100 TI Luminaire (20.9664.0001.03 - Black / 20.9664.0001.03.02 - White)

- 1000W Tungsten Halogen lamp source.
- Beam-size iris mechanism.

VL1100 AS Luminaire (20.9664.0001.12 - Black / 20.9664.0001.12.02 - White)

- 575W arc lamp source with external ballast unit.
- Four-blade shutter framing system.
- Mechanical dimmer.

VL1100 AI Luminaire (20.9664.0001.13 - Black / 20.9664.0001.13.02 - White)

- 575W arc lamp source with external ballast unit.
- Beam-size iris mechanism.
- Mechanical dimmer.

VL1100 TSD Luminaire (20.9664.0001.22 - Black / 20.9664.0001.22.02 - White)

- 1000W Tungsten Halogen lamp source.
- 115V on-board electronic IGBT dimmer.
- Four-blade shutter framing system.

VL1100 TID Luminaire (20.9664.0001.23 - Black / 20.9664.0001.23.02 - White)

- 1000W Tungsten Halogen lamp source.
- 115V on-board electronic IGBT dimmer.
- Beam-size iris mechanism.

VL1100 TSD230 Luminaire (20.9664.0001.32 - Black / 20.9664.0001.32.02 - White)

- 1000W Tungsten Halogen lamp source.
- 230V on-board electronic IGBT dimmer.
- Four-blade shutter framing system.

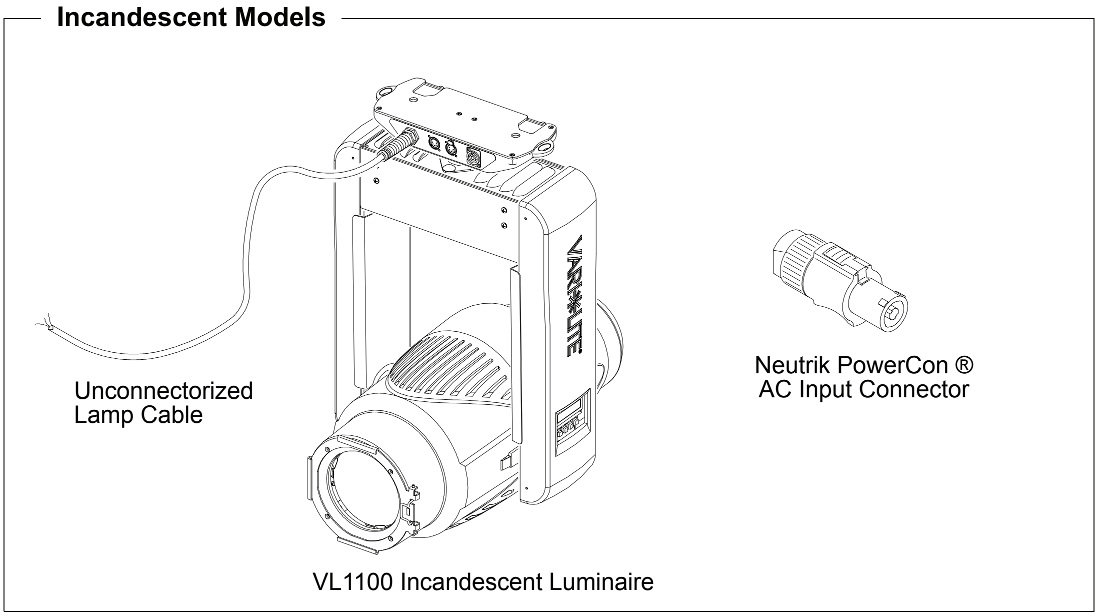
VL1100 TID230 Luminaire (20.9664.0001.33 - Black / 20.9664.0001.33.02 - White)

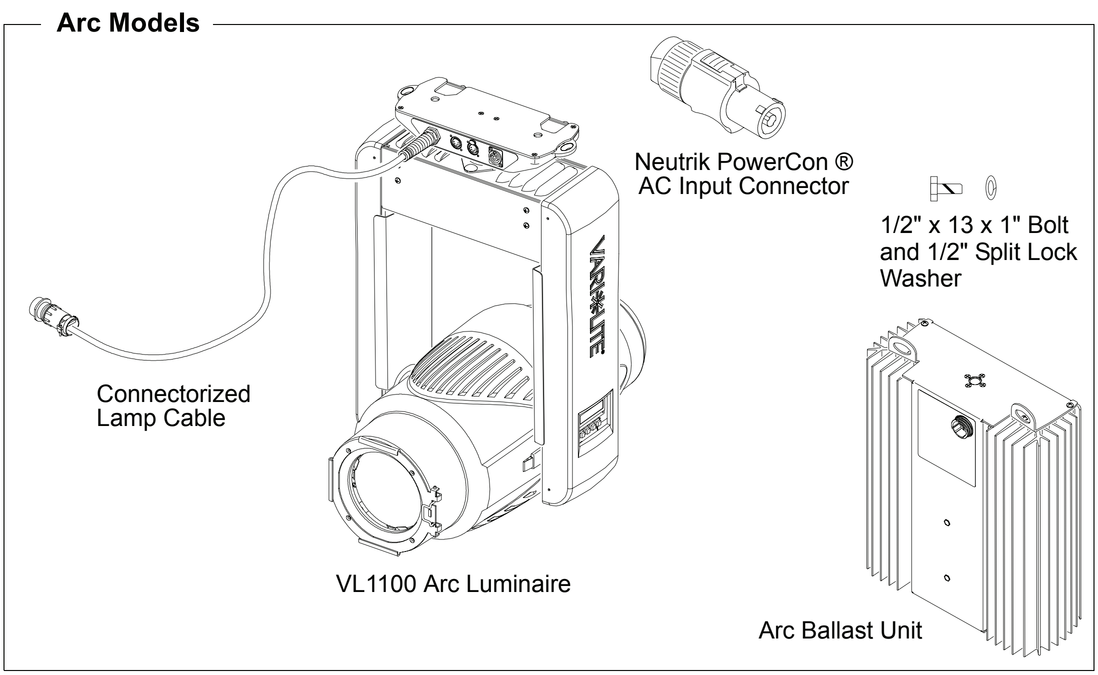
- 1000W Tungsten Halogen lamp source.
- 230V on-board electronic IGBT dimmer.
- Beam-size iris mechanism.

Components

Included Items

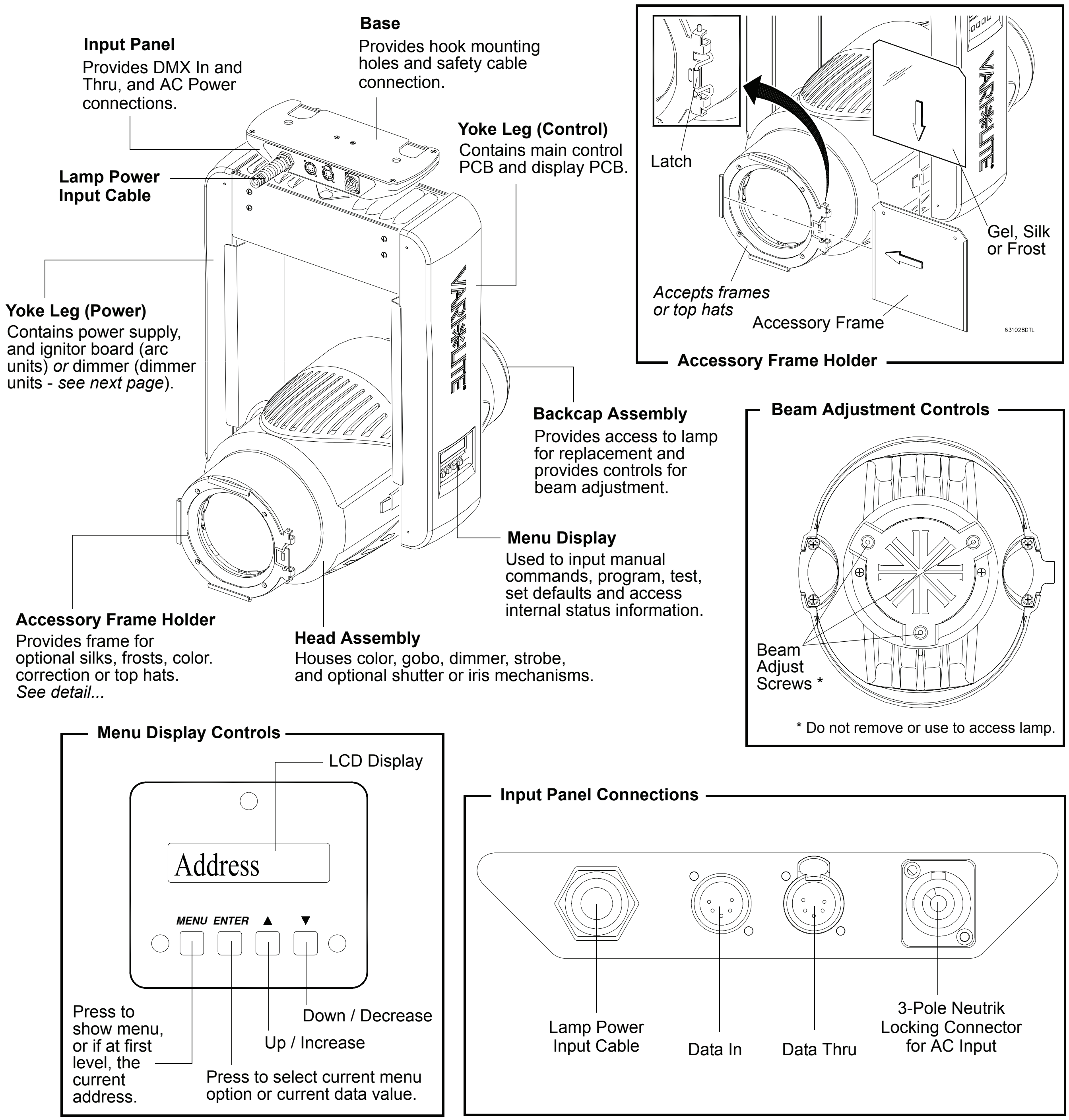
The following illustration shows the included components for either the incandescent or arc models.





Luminaire Overview

The following illustration shows the external luminaire components and controls.



Dimmer Model Overview

An electronic IGBT on-board dimmer is included with VL1100 incandescent dimmer models. The dimmer heatsink is visible on the power-side yoke leg as shown in the following illustration.

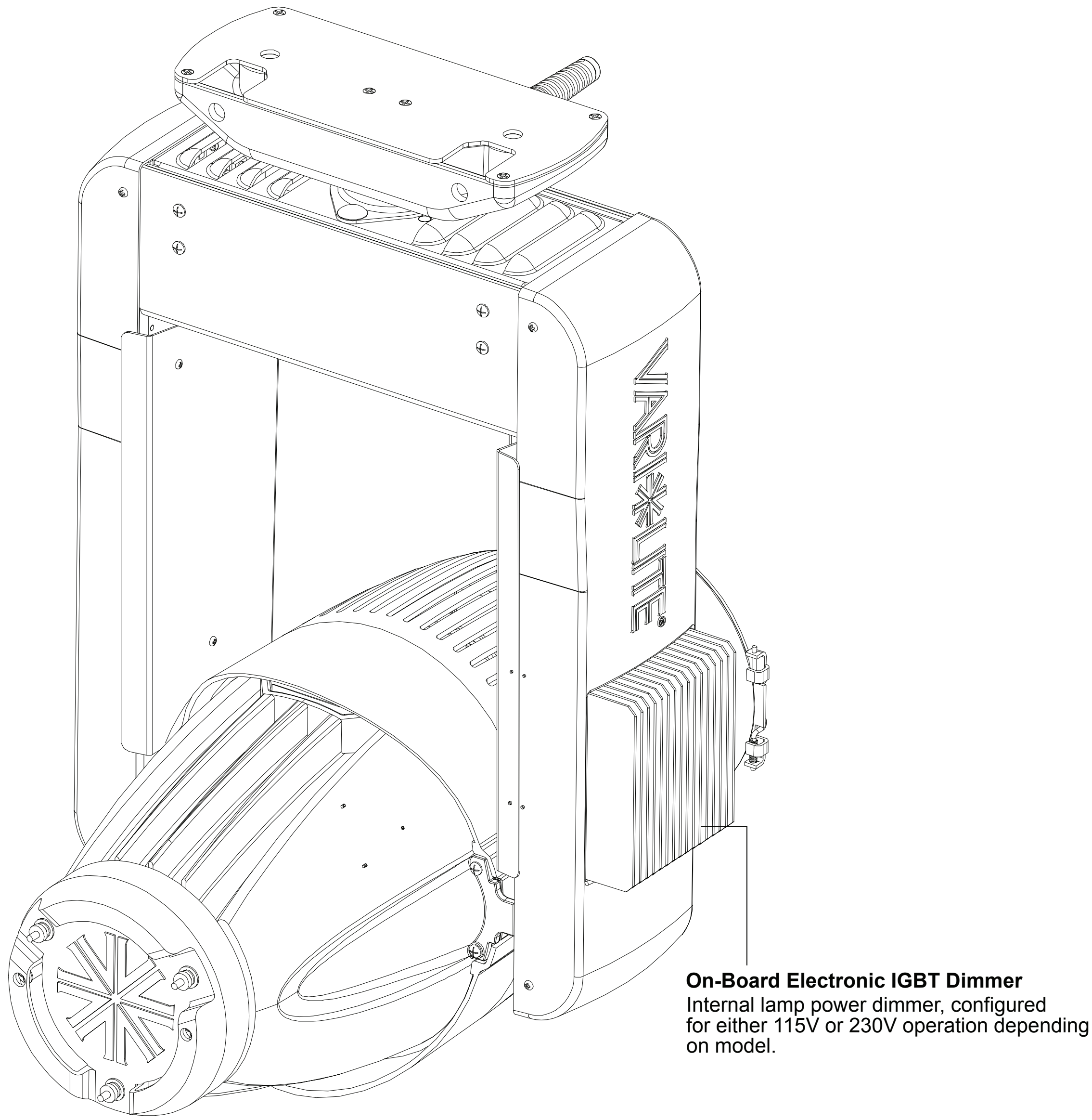


Figure 1-1: VL1100 Tungsten Luminaire with On-Board IGBT Dimmer

Arc Model Overview

An external ballast unit is included with VL1100 arc models. In this case, the lamp power input cable is already connectorized for use with this unit.

The following illustration shows the external arc ballast components.

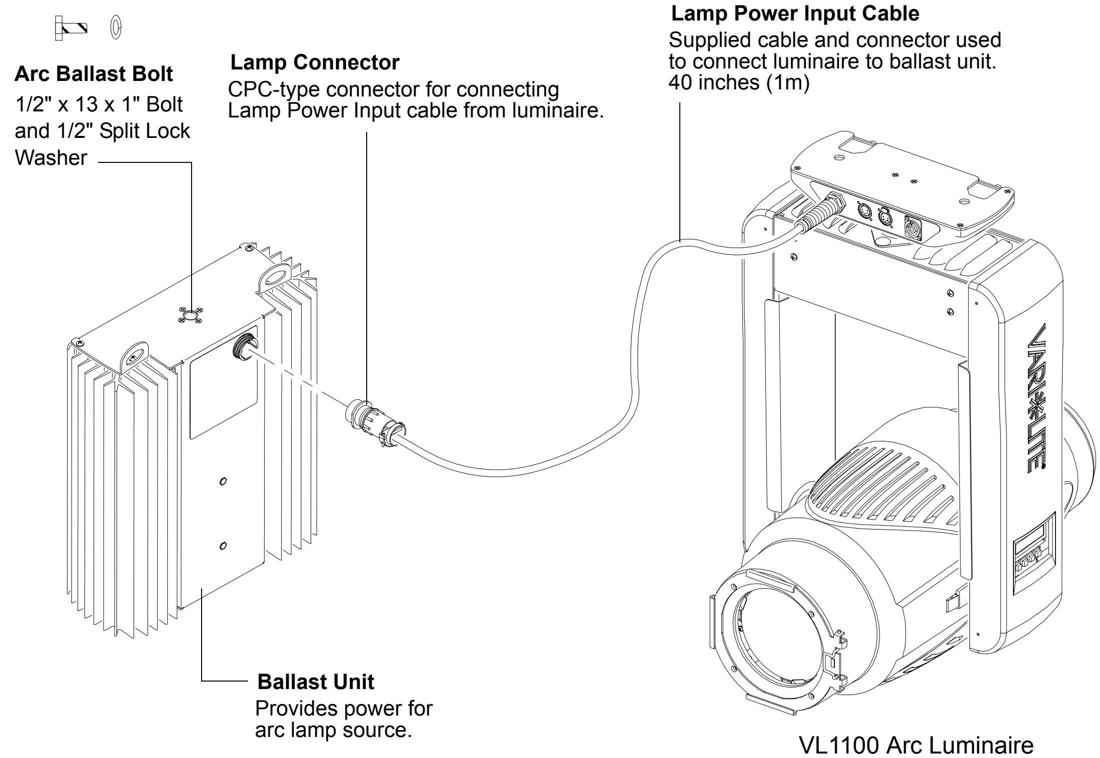


Figure 1-2: VL1100 Arc Luminaire with External Ballast

Note: The Lamp Power Input Cable has conductors for lamp power and ballast control. It is not compatible with VARI✻LITE® Series 300™ lamp runs.

Accessories

VL1100 ERS Replacement Items/Accessories

The following optional and/or replacement items can be ordered directly from Vari-Lite. (Please order by Vari-Lite part number.)

VARI-LITE P/N	ACCESSORY
21.9663.1400	Beam-Size Iris Assembly (Non-Shutter Units)
22.9620.0194	Safety Cable Assembly
25.9661.0056	DMX Loopback Connector Assembly
25.9661.0057	DMX Terminator, 120 Ohm
28.8500.0054	USB Luminaire Programming Kit (Includes USB Upload Cable, Programming Kit CD ROM, Carry Bag, and Instructions)*
52.6541.0001	Neutrik PowerCon NAC 3 FCA AC Inlet Connector
55.6840.0001	Truss Hook, Mega-Clamp, Round and Square
55.6841.0001	Truss Hook, Mega-Claw for 2" Round Tube
71.2528.0575	575W Arc Lamp, MSR575HR - Philips
71.2552.0100	1000W Incandescent Lamp, 100V - Philips
71.2552.0115	1000W Incandescent Lamp, 115V - Philips
71.2552.0230	1000W Incandescent Lamp, 230V - Philips
71.2554.0100	1000W Incandescent Lamp, 100V - Ushio
71.2554.0115	1000W Incandescent Lamp, 115V - Ushio
71.2554.0230	1000W Incandescent Lamp, 230V - Ushio
71.2554.0240	1000W Incandescent Lamp, 240V - Ushio
71.2556.0575	575W Long-Life Arc Lamp, MSD575HR - Phillips
41.6010.XXXX	VL1000 Gobo *(specify pattern from Vari-Lite catalog to complete P/N). Note, VL1100 luminaires use the same size gobos as VL1000 luminaires. Contact your Authorized VARI❋*LITE® *Dealer or Vari-Lite customer service for assistance.*

Note: * For more information on the USB Luminaire Programming Kit, please see "USB Download and Programming Luminaires" on page 53.

CHAPTER 2.

Installation

This chapter contains instructions for installation of all version of the VL1100 ERS Luminaire. It includes connecting power and data, along with instructions for powering up the luminaire for the first time and addressing it within your system.

- **Power and Data Cabling Requirements**
- **Installation Procedures**
- **Powering Up**
- **Addressing**

Power and Data Cabling Requirements

AC Power

WARNING: Other than described herein, do not power a VL1100™ ERS Luminaire from a dimmed circuit - even in "Non-Dim" mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure. Using a dimmer or non-dim module to power your VARI✻LITE® luminaire will void your luminaire's warranty.

The luminaire requires standard AC power distribution from 90-264 VAC, 50/60 Hz in order to power all internal electronics and motors. It is equipped with a 3-pole Neutrik® PowerCon® locking connector (with contacts for line, neutral, and premating safety grounds) for the purpose of AC input. The mating Neutrik PowerCon® connector is supplied, however, you will need to purchase or construct a cable appropriate for your application.

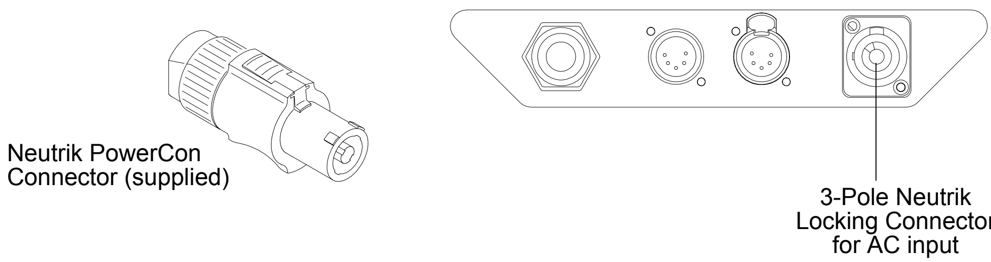


Figure 2-1: Power Connector

Current vs. Voltage

The following tables provide the luminaire's current draw at specific voltages. (Currents given are worst case with all motors sequencing.)

Table 2-1: VL1100TS/VL1100TI Current vs. Voltage *

Voltage @ 60Hz	Current
115	1.3 A
208	0.75 A
230	0.65 A

* Does not include lamp power.

Table 2-2: VL1100AS/VL1100AI Current vs. Voltage **

Voltage @ 60Hz	Current
115	7.8 A
208	4.4 A
230	3.8 A

** Includes ballast power.

Table 2-3: VL1100TSD/VL1100TID Current vs. Voltage ***

Voltage @ 60Hz	Current
115	10A

Table 2-4: VL1100TSD230/VL1100TID230 Current vs. Voltage ***

Voltage @ 60Hz	Current
230	5A

*** Includes lamp power.

Lamp Power

WARNING: Other than described herein, do not power a VL1100™ ERS Luminaire from a dimmed circuit - even in "Non-Dim" mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure. Using a dimmer or non-dim module to power your VARI✱LITE® luminaire will void your luminaire's warranty.

Lamp power for the VL1100 lamp is supplied in one of three ways depending on model configuration:

- External dimmer (incandescent units without on-board dimmer - supplied by others).
- Internal dimmer (incandescent units with on-board IGBT dimmer).
- External ballast (arc units).

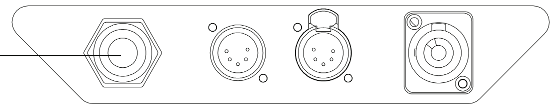


Figure 2-2: Lamp Power Input

Incandescent Models (without On-Board Dimmer)

Some incandescent versions of the VL1100 ERS Luminaire will require an external dimmer unit for lamp power. A lamp power input cable is provided for connecting to these units. Install a connector meeting your requirements using the following wire color code:

Wire*	Connection
Green/Yellow	AC Ground
Blue	AC Neutral
Brown	AC Line

* International (Harmonized) Standard

Incandescent Models (with On-Board IGBT Dimmer)

Some incandescent models of the VL1100 ERS luminaire contain an on-board IGBT dimmer. This dimmer is used to power the lamp without need for an external dimmer. In these models, the lamp power cable is not supplied and instead a blanking plug is installed at the power/data input panel (see Figure 2-2).

CAUTION: The on-board IGBT dimmer is voltage specific (not switchable). It is either 115V or 230V, depending on model purchased. Before connecting power, determine the operational voltage for the unit. If required, please contact Vari-Lite customer service or your Authorized VARI✻LITE® Dealer for assistance.

Arc Models

An external arc ballast unit is included with the arc version of the VL1100 ERS Luminaire. The lamp power input cable is already connectorized for use with this unit.

Note: There is no provision for lengthening the cable. The ballast must be placed within 40 inches (1m) of the luminaire. The Lamp Power Input Cable has conductors for lamp power and ballast control. It is not compatible with VARI❋LITE® Series 300 lamp runs.

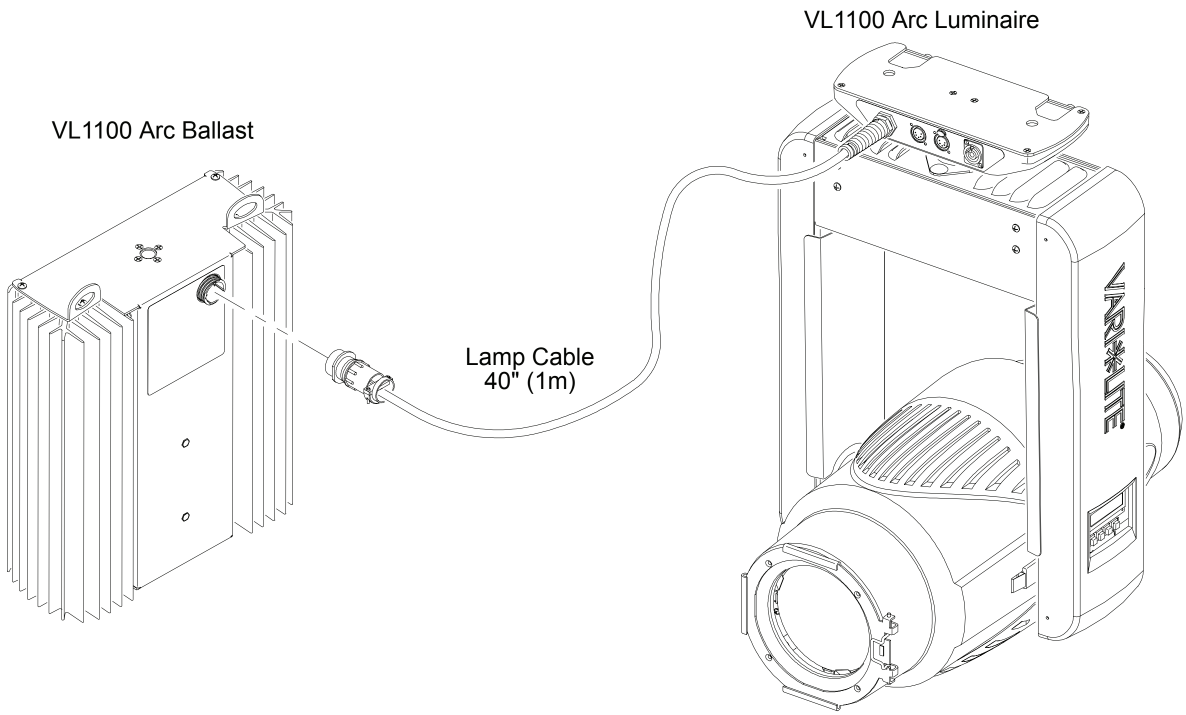


Figure 2-3: VL1100 Arc Luminaire Ballast Connection

Data Cables

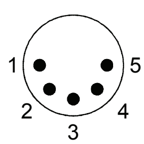
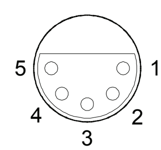
The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be used, but also quality cable to ensure a reliable DMX512 system. Your cabling should meet the following USITT DMX specification requirements:

- Suitable for use with EIA485 (RS485) operation at 250k baud.
- Characteristic impedance 85-150 ohms, nominally 120 ohms.
- Low capacitance.
- Two twisted pairs.
- Foil and braid shielded.
- 24 AWG min. gauge for runs up to 1000 feet (300m).
- 22 AWG min. gauge for runs up to 1640 feet (500m).

Note: Microphone type cables and other general purpose, two-core audio or signal cables are not suitable for use with DMX512.

Refer to the USITT Recommended Practice for DMX512 guide for additional information regarding DMX512 systems. How to obtain a copy is detailed in "Additional Documentation" on page 2.

The XLR 5-pin connectors should be wired as follows:

Pin/Wire Code to XLR Connectors						
Data Thru Cable Pinout  Male Conn	**Pin 1** Foil & Braided Shield	**Pin 2** 1st conductor of 1st twisted pair Data (-)	**Pin 3** 2nd conductor of 1st twisted pair Data (+)	**Pin 4** 1st conductor of 2nd twisted pair Data (-)	**Pin 5** 2nd conductor of 2nd twisted pair Data (+)	Data In Cable Pinout  Female Conn

Recommended Cable Types/Manufacturers

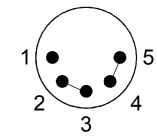
These are only a few of the suitable cable types. Any quality EIA485, twisted pair, 120 ohm, shielded cable will also work.

Type	Pairs	ZΩ*	Jacket	AWG	Use	Temp (F)
Belden Cables						
1215A	2	150	PVC	26	IBM Type 6 Office cable	75
1269A	2	100	PTFE	22 (Solid)	High Temp, Plenum cable	200
8102	2	100	PVC	24	UL2919	80
8132	2	120	PVC	28	UL2919	80
8162	2	100	PVC	24	UL2493	60
82729	2	100	PTFE	24	High Temp, Plenum cable	200
88102	2	100	PTFE	24	High Temp, Plenum cable	200
89696	2	100	PTFE	22	High Temp, Plenum cable	200
89729	2	100	PTFE	24	High Temp, Plenum cable	200
89855	2	100	PTFE	22	High Temp, Plenum cable	200
9729	2	100	PVC	24	UL2493	60
9804	2	100	PVC	28	UL2960	60
9829	2	100	PVC	24	UL2919	80
9842	2	120	PVC	24	UL2919	80
Proplex Cables						
PC224P	2	110	Polyurethane	22	Heavy Duty and Portable	105
PC224T	2	110	PVC	22	UL2464	105
PC226T	3	110	PVC	22	UL2464	

* Characteristic Impedance

DMX Termination Connector

A male XLR DMX termination connector is required at the last luminaire (or "far end of the line") to prevent signal reflections. Signal reflections may cancel out the signal at certain line lengths, resulting in errors. The terminator is also necessary for software downloads and running tests on multiple luminaires. To construct your own connector, you will need the following components:



Solder resistors across pins 2 & 3, and 4 & 5

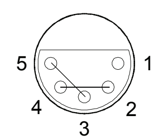
- 5-pin, male XLR connector.
- Two 1/4W 5% 120 ohm resistors.

Note: A male termination connector is available as an accessory from Vari-Lite. See "Accessories" on page 12.

Loopback Connector

When transferring software versions from luminaire to luminaire, a loopback connector is required at the first luminaire in the data link.

To construct your own connector, you will need the following components:



Solder wires across pins 2 & 4, and 3 & 5

- 5-pin, female XLR connector.
- Two small segments of 22 AWG wire.

Note: A loopback connector is available as an accessory from Vari-Lite. See "Accessories" on page 12.

Installation Procedures

Installing Lamp (Incandescent Models)

In the event the lamp was packed separately during shipment, it will be necessary to install before use.

WARNING: Ensure that power is removed from luminaire when installing lamp.

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install incandescent lamp:

Step 1. Ensure power is removed from luminaire.

Step 2. At backcap, gradually loosen two 10-32x2-3/8" PPSS black screws (Figure 2-4) a few turns at a time until backcap is free. (Screws must be alternately loosened to prevent one side from locking up.)

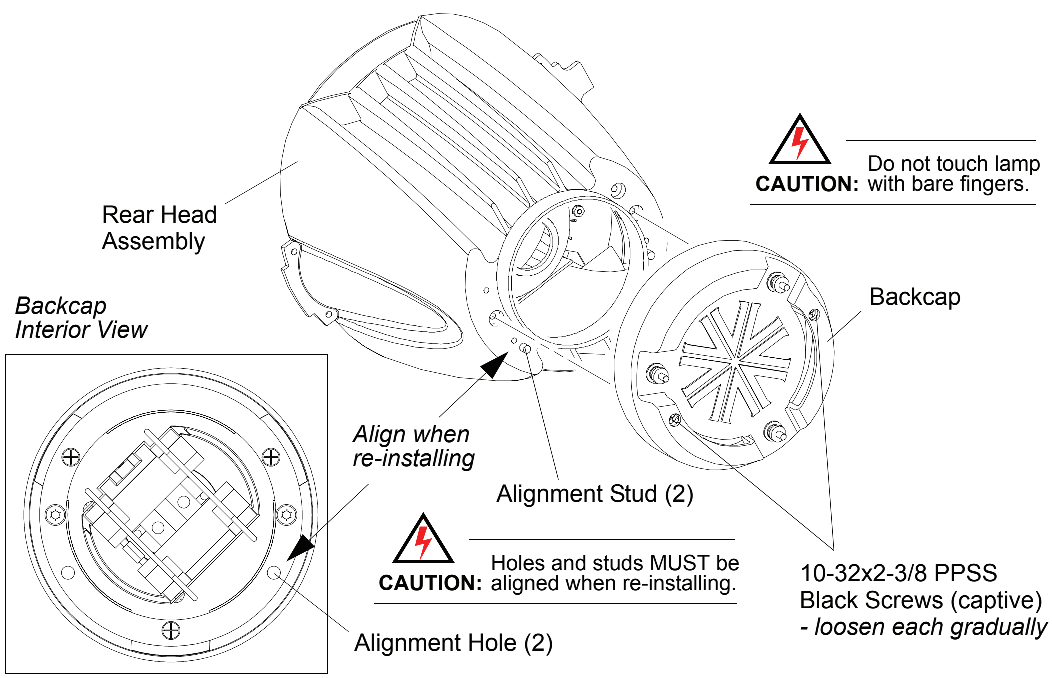


Figure 2-4: Removing Incandescent Backcap

Step 3. At backcap, flip two bail clamps outward (Figure 2-5).

Step 4. Flip two base clamps outward away from socket.

Step 5. Grip lamp by base and firmly install in socket.

Step 6. Close base and bail clamps, locking into place.

CAUTION: Do not touch lamp with bare fingers.

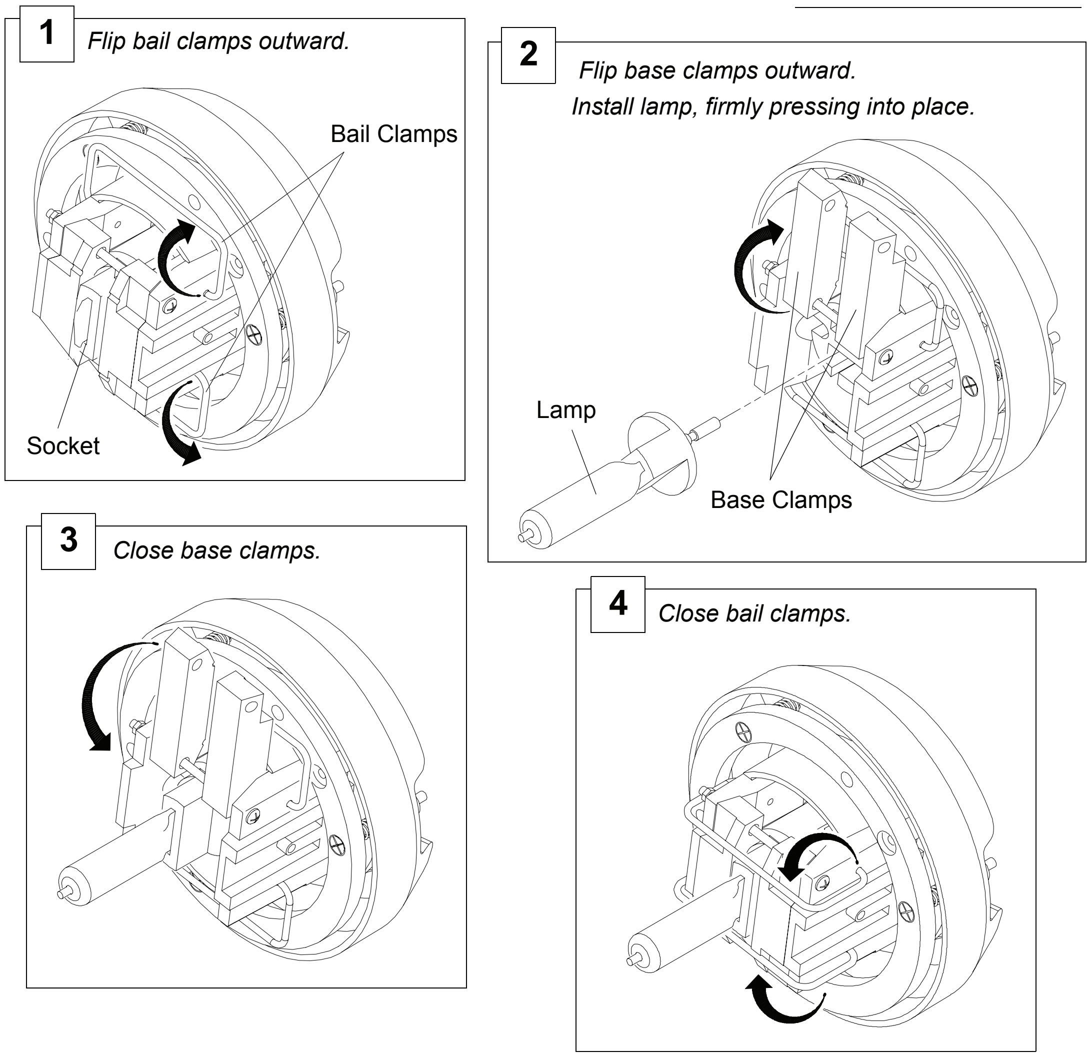


Figure 2-5: Installing Incandescent Lamp in Socket

Step 7. Re-install backcap, ensuring that alignment studs and holes are aligned (Figure 2-4).

Step 8. Align lamp. (Refer to "Align Lamp For Maximum Beam Irradiance" on page 34.)

Installing Lamp (Arc Models)

In the event the lamp was packed separately during shipment, it will be necessary to install before use.

WARNING: Ensure that power is removed from luminaire when installing lamp.

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install arc lamp:

Step 1. Ensure power is removed from luminaire.

Step 2. At backcap, gradually loosen two 10-32x2-3/8" PPSS black screws (Figure 2-6) a few turns at a time until backcap is free. (Screws must be alternately loosened to prevent one side from locking up.)

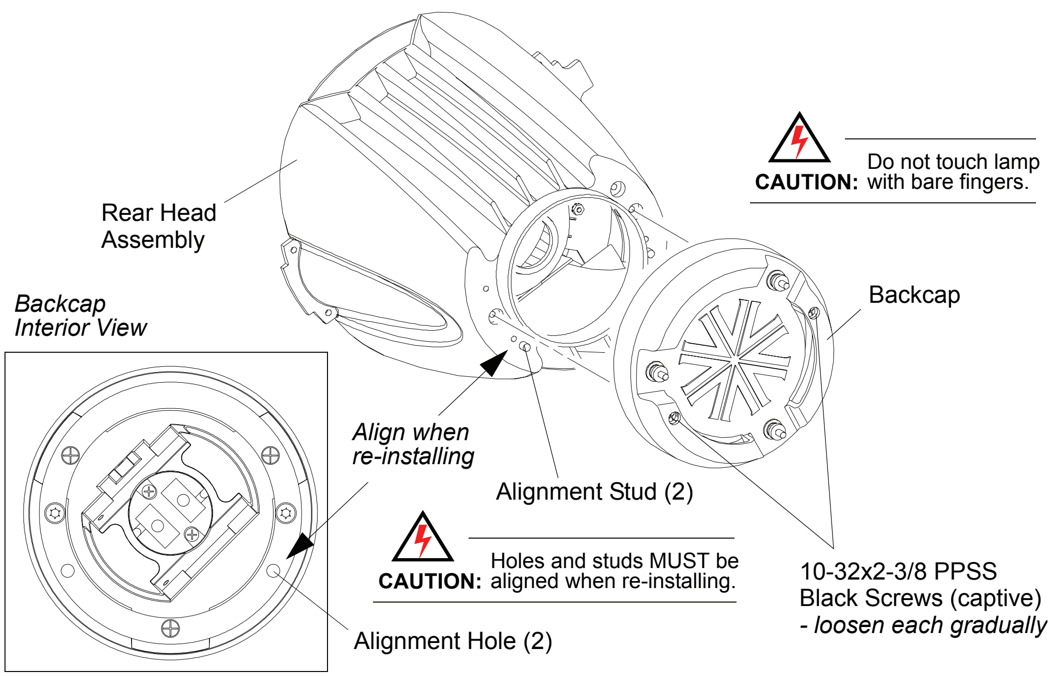


Figure 2-6: Removing Arc Backcap

Step 3. Grip lamp by base and firmly install in socket.

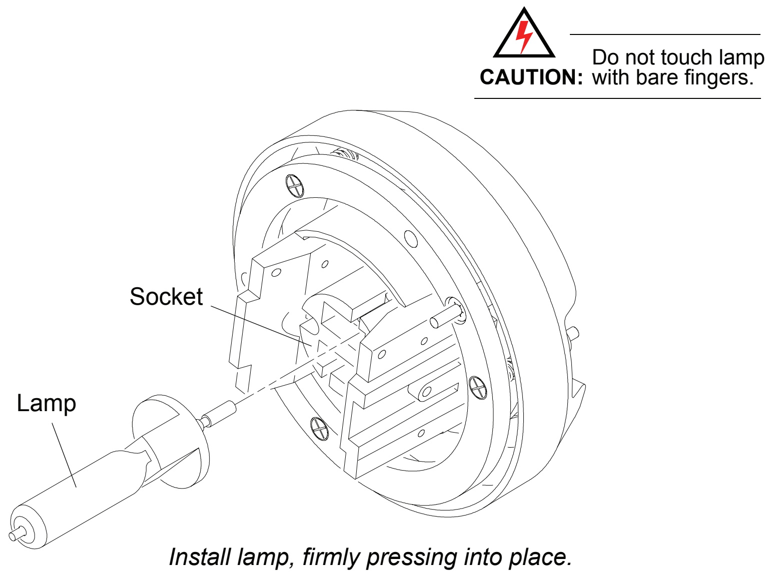


Figure 2-7: Installing Arc Lamp in Socket

Step 4. Re-install backcap, ensuring that alignment studs and holes are aligned (Figure 2-6).

Step 5. Align lamp. (Refer to "Align Lamp For Maximum Beam Irradiance" on page 34.)

Accessory Frame Holder

An accessory frame holder is provided for the addition of a top hat or gel frame with silks, frosts or color correction if required. The frame holder is designed to fit a standard 8-inch gel frame or top hat.

To remove and replace frame or top hat:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At front lens, press upward on accessory frame latch and turn to open.

Step 3. Remove frame/top hat, if any (Figure 2-8).

Step 4. Install frame/top hat and close latch.

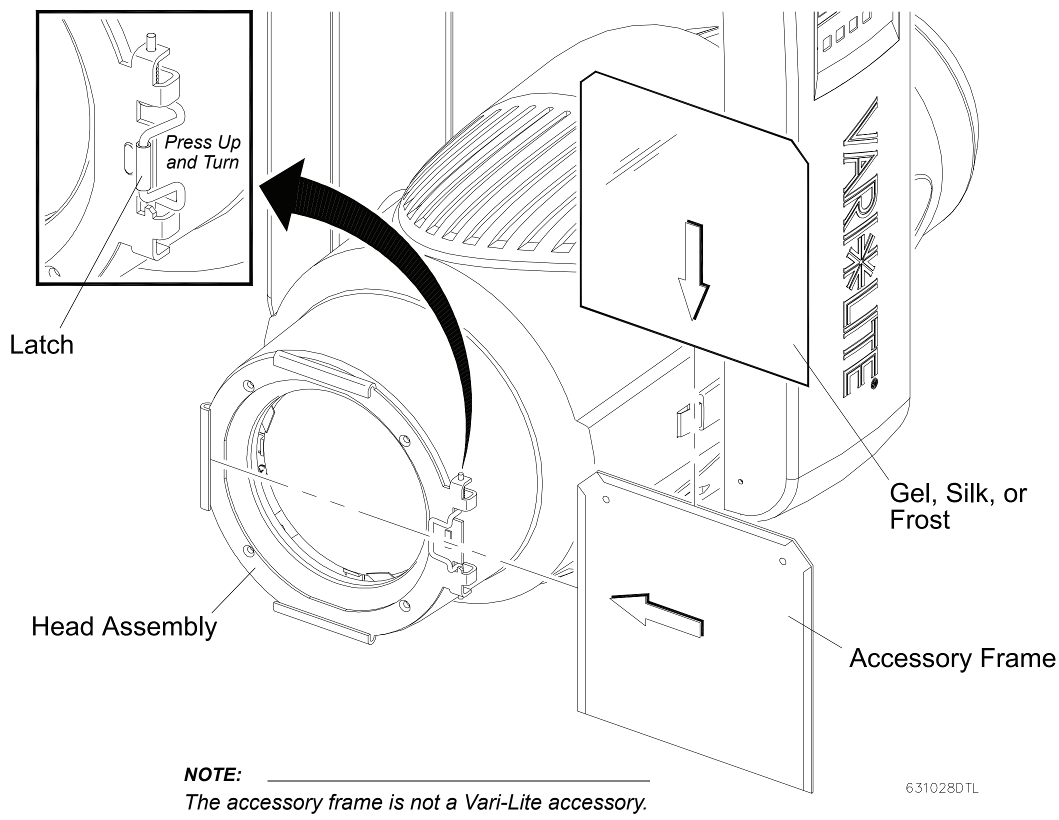


Figure 2-8: Installing a Frame or Top Hat

Hanging the Luminaire

The luminaire can be hung horizontally or vertically from any structure designed to work with the type of load created by this moving luminaire. The pan tube base provides two mounting holes for attaching truss hooks or other mounting hardware as required. Many compatible truss hooks are available from different manufacturers for your particular needs. The Mega Claw Truss Hook, shown in the example illustration below, can be ordered separately from Vari-Lite (refer to "VL1100 ERS Replacement Items/Accessories" on page 12).

To install truss hooks (if required):

Step 1. At pan tube base, attach two truss hooks as shown below (Figure 2-9).

Step 2. Tighten hardware securely.

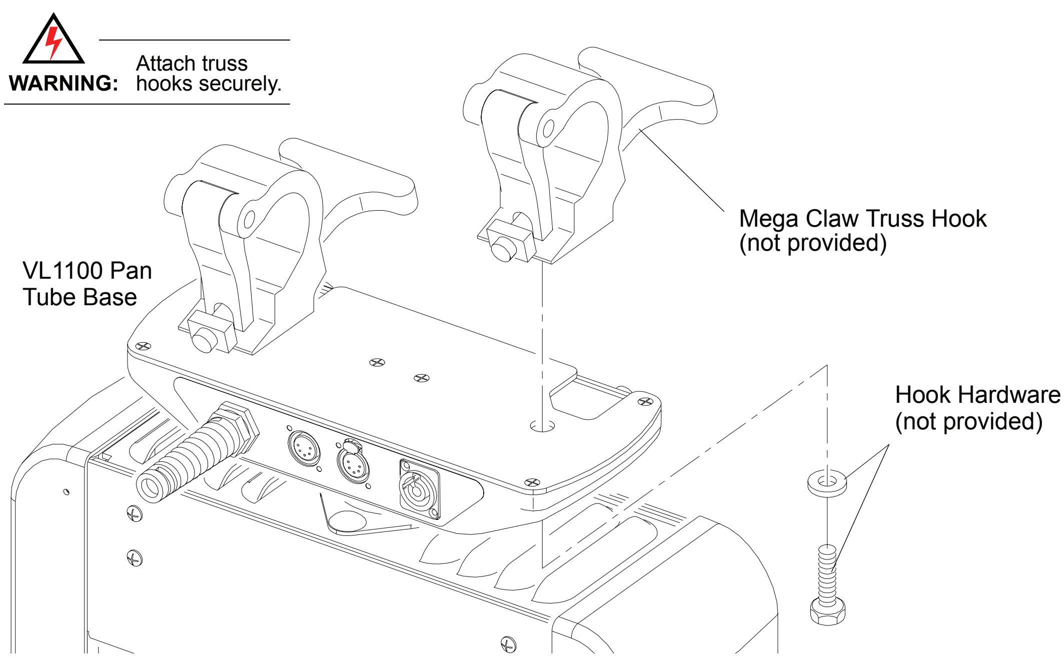


Figure 2-9: Example VL1100 Luminaire Truss Hook Installation

To hang luminaire in truss:

Step 1. Lift luminaire into mounting position.

Step 2. Secure in place with truss hooks. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that luminaire is fully supported.

Step 3. Attach safety cable (sold separately) as follows:

a. Connect end of cable to mounting pin at one side of pan tube base.

b. Loop at least once around pipe and attach other end at second mounting pin.

Step 4. Connect power and data cables according to procedure given in "Connecting Data and Power" on page 30.

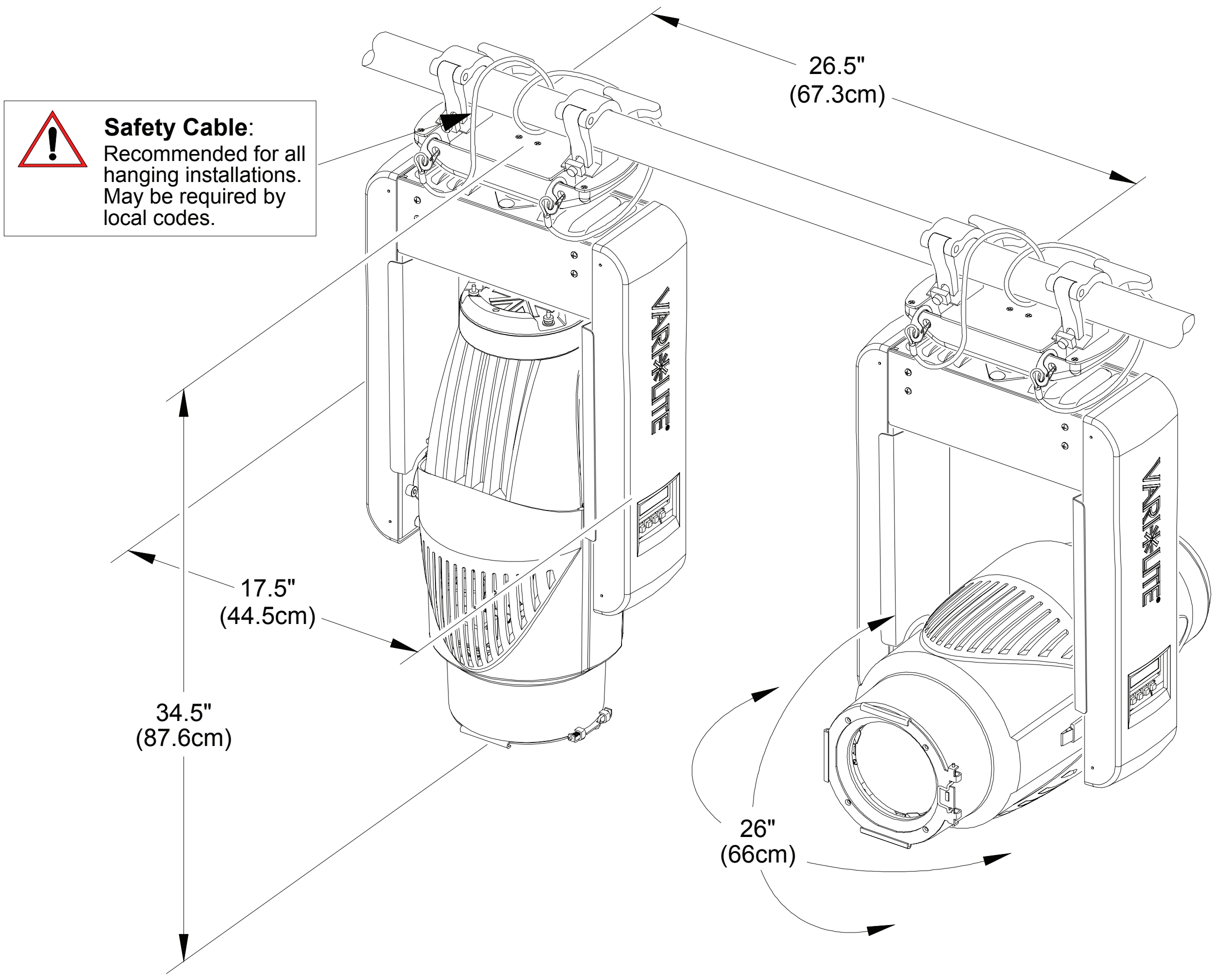


Figure 2-10: Example VL1100 Luminaire Truss Hanging Installation

Hanging the Ballast (Arc Models Only)

The external ballast unit included with arc models will need to be installed near the luminaire. In order for the lamp cable to be connected, the ballast must be placed within 40 inches (1m). The top panel provides one mounting hole for attaching a truss hook or other mounting hardware as required. (Compatible truss hooks are available from different manufacturers for your particular needs.).

To install truss hooks (if required):

Step 1. Attach truss hook as shown below (Figure 2-11).

Step 2. Tighten hardware securely.

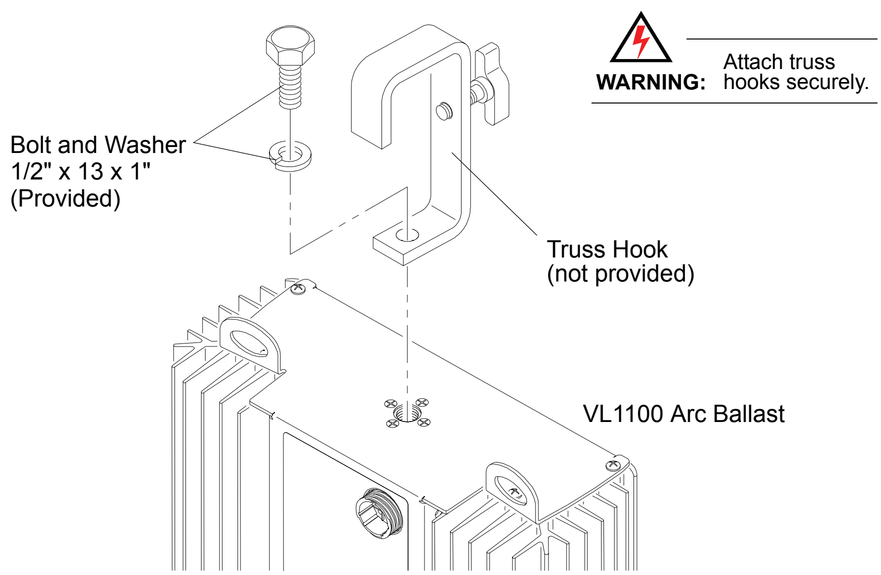


Figure 2-11: Example VL1100 Arc Ballast Truss Hook Installation

To hang arc ballast in truss:

Step 1. Lift ballast into mounting position.

Step 2. Secure in place with truss hook. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that ballast is fully supported.

Step 3. Attach safety cable (sold separately) as follows:

a. Connect end of cable to attachment point at one side of ballast.

b. Loop at least once around pipe and attach other end at second point.

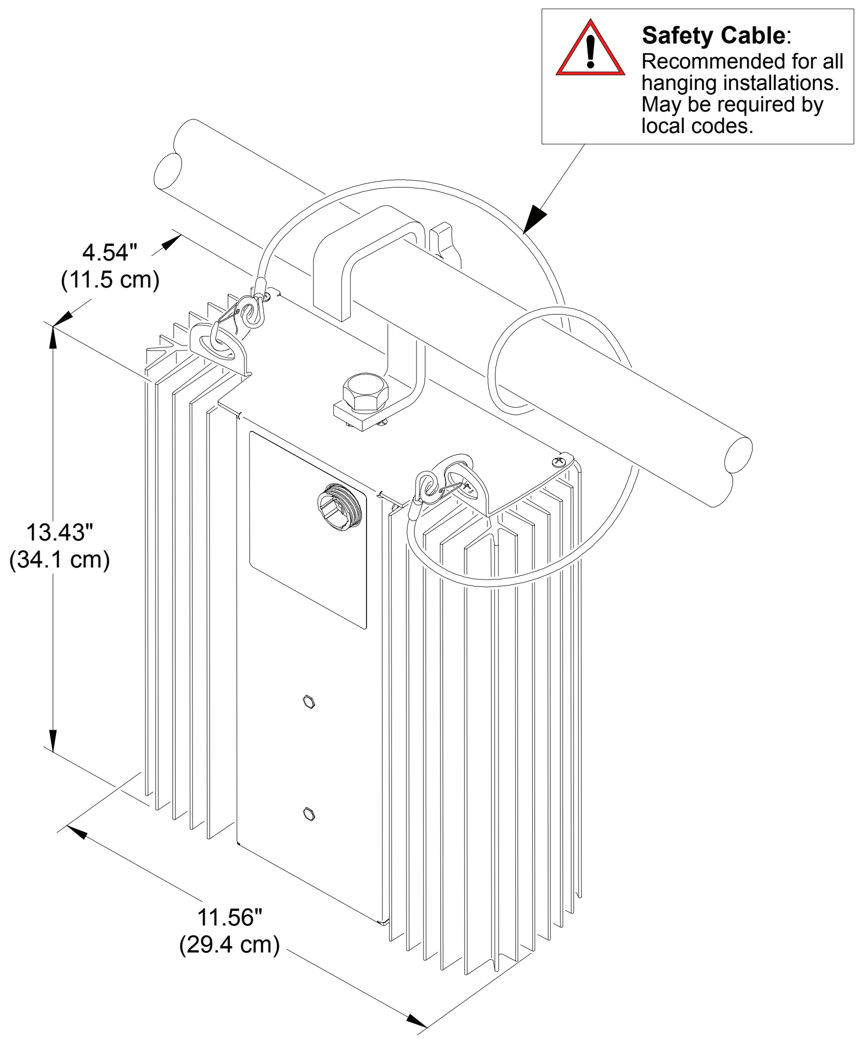


Figure 2-12: VL1100 Arc Ballast Installation

Connecting Data and Power

A maximum of 32 luminaires may be connected in any one DMX data link.

Note: This maximum limit applies to the luminaire "daisy chain" only. Your system or console may require fewer luminaires on a single data link path. Consult your console documentation for more information.

To connect power and data:

Step 1. Connect data cable from console to first luminaire in chain at DATA IN connector.

Step 2. If required, connect additional data cables from DATA THRU connectors to DATA IN connectors of remaining luminaires in link.

Step 3. At last luminaire in link, install DMX termination connector at DATA THRU connector. (Luminaires and other devices on the same DMX chain may not function properly without termination.)

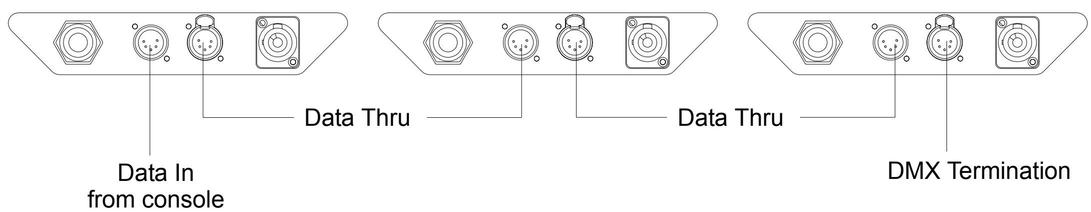


Figure 2-13: Data Connection

Step 4. Connect AC Input Cable connector to power input source.

Step 5. Connect Lamp Power Input Cable to external ballast (arc models) or dimmer (incandescent models).

Step 6. Dress cables and secure them so that they will not interfere with luminaire head and yoke movement.

Powering Up

Power-Up and Configuration Overview

First Power-Up

When powering up a VL1100 ERS Luminaire for the first time, the lamp type and shutter settings must be configured. This procedure will usually happen prior to delivery. However, in the event that it has not been done or if the Main Controller Board has been replaced, it will be necessary. Follow one of these two power-up procedures depending on whether the luminaire requires configuration:

- Already configured - “Standard Power Up Procedure” on page 32.
- Not configured - “Power Up and Configuration Procedure” on page 33.

Calibration Sequence

After AC power is applied, the luminaire will start powering up (this will take 10-15 seconds) and then begin a calibration sequence that steps it through full pan and tilt movements. The internal mechanisms will also move through a full range of motion. After calibration, the luminaire head will either stop at its "home" position (which positions the pan axis at mid-rotation and the head parallel to the yoke with the lens pointing away from the luminaire upper enclosure) or move to its current defined position if DMX data is present. All internal mechanisms also move to their "home" or defined positions.

For Arc lamp models, depending on the luminaire’s setting for Lamp Power-Up State (refer to “Menu System Function Chart” on page 61), when power is applied the lamp will either **a)** “strike” or ignite - Lamp On (*default)*, **b)** await calibration and then strike - Cal On, or **c)** await manual command to strike - Lamp Off.

Importance of Correct Configuration

The configuration settings MUST be correct or the luminaire will not operate properly. The configuration settings specify whether or not the luminaire contains a shutter system or beam-size iris, which will then affect the DMX mapping of the luminaire. For example, choosing the shutter option will configure the luminaire for 27 DMX channels, while not choosing the shutter option will configure it for 19 DMX channels. When the luminaire is configured as having no shutter, the option for the beam-size iris becomes available. Refer to “Channel Mapping” on page 38 for more detailed information on this subject.

Standard Power Up Procedure

Use this procedure when powering up a luminaire that has already been configured. (Refer to "Power-Up and Configuration Overview" on page 31.)

Note: Refer to **Chapter 4:** Menu System for detailed instructions on menu functions.

CAUTION: Before applying power, be sure the luminaire is hung or positioned so that the head and yoke can move freely without restriction.

To power up luminaire:

Step 1. At each luminaire, apply power by switching on power source. Luminaire will display Starting for 10-15 seconds, and then automatically step through the following procedure:

a. For Arc lamps:

1) If Lamp Power-Up State is set to Lamp On, lamp will strike (ignite).

2) Luminaire will cycle through calibration and stop at "home" position.

3) If Lamp Power-Up State is set to Cal On, lamp will strike (ignite) at end of calibration sequence.

b. For Incandescent lamps:

1) Luminaire will cycle through calibration and stop at "home" position.

Power Up and Configuration Procedure

Use this procedure when powering up a luminaire that has not been previously configured. (Refer to "Power-Up and Configuration Overview" on page 31.)

Note: Refer to **Chapter 4:** Menu System for detailed instructions on menu functions.

CAUTION: Before applying power, be sure the luminaire is hung or positioned so that the head and yoke can move freely without restriction.

To configure luminaire at power up:

Step 1. At each luminaire, apply power by switching on power source.

Step 2. For unconfigured luminaires, menu will display LampType. Press [Enter] to move to next level.

Step 3. Press [Up]/[Down] to toggle options. Choose either Arc or Incand by pressing [Enter].

Note: If Arc is selected, the menu system will update to include the Dimmer, DMX, and Manual commands. (Dimmer will be added even if no dimmer is present.)

Step 4. Press [Up]/[Down] to select Shutter?. Press [Enter] to move to next level.

Step 5. Press [Up]/[Down] to toggle options. Choose either Yes or No by pressing [Enter].

Note: If the luminaire is configured NOT to have the shutter system, the menu will automatically update to include the beam-size iris assembly (even if one is not present), DMX, and Manual commands.

Step 6. Luminaire will display Starting for 10-15 seconds, and then automatically step through following procedure:

a. For Arc lamps:

1) If Lamp Power-Up State is set to Lamp On, lamp will strike (ignite).

2) Luminaire will cycle through calibration and stop at "home" position.

3) If Lamp Power-Up State is set to Cal On, lamp will strike (ignite) at end of calibration sequence.

b. For Incandescent lamps:

1) Luminaire will cycle through calibration and stop at "home" position.

Align Lamp For Maximum Beam Irradiance

After a new lamp is installed in either the incandescent or arc version of the luminaire, it will be necessary to align the lamp to optimize the beam.

WARNING: Backcap and adjustment screws will be HOT during lamp operation. Wear gloves and/ or use tools to prevent burns.

To align lamp:

Step 1. Set intensity to 100%.

Step 2. Position beam on a white wall at a distance of 10 to 20 feet.

Step 3. Using console or internal luminaire menu controls, set zoom to zero and focus to a hard edge. If installed, be sure that beam-size iris and shutters are open.

Step 4. Using three adjustment screws, adjust hot spot to center of beam (Figure 2-14).

Step 5. Check color uniformity as follows:

a. Position one of the color stages at 30% of maximum. (Cyan or Magenta work best.)

b. Verify that beam color is uniform (if lamp is misaligned, color will be concentrated to one side of beam). If color is not uniform, readjust lamp until color is uniform across entire beam field.

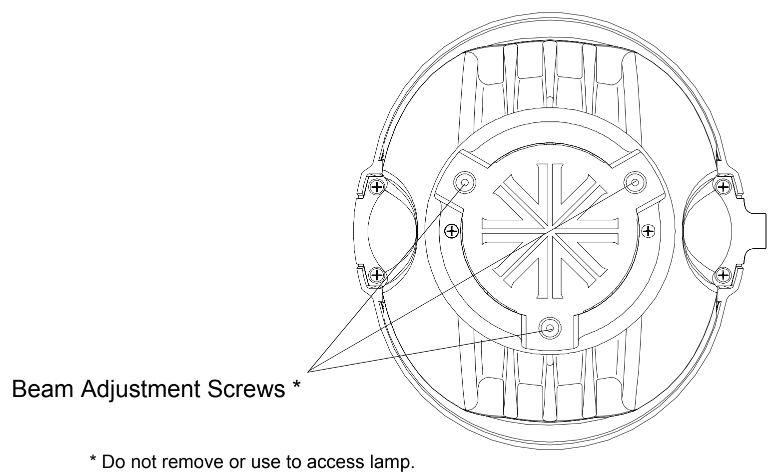


Figure 2-14: Lamp Alignment Screws

Addressing

Program Starting Address

The DMX starting address is entered using the Menu Display. This address will be retained even if the power is removed.

Note: Refer to **Chapter 4:** Menu System for detailed instructions on menu functions.

Note: Refer to your console operating instructions for specific information regarding its addressing requirements.

To program a DMX starting address:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Address appears. Press [Enter].

Step 3. DMX will appear. Press [Enter].

Step 4. Press [Up] / [Down] arrows to enter starting address.

Step 5. Press [Enter] to set.

Program Starting Address Without Calibrating

It is possible to bypass the calibration sequence and go directly to the Menu Display programming in order to pre-program an address setting.

To program starting address without calibrating luminaire:

- While powering up luminaire, press and hold [Menu]. Program address as in Program Starting Address above.
- Release when display reads ":"

Note: The luminaire will require a reset to restore control.

Notes

CHAPTER 3.

Operation

This chapter contains instructions for operating the luminaire using DMX control and for updating the internal software.

- **DMX Operation**
- **DMX Mapping**
- **Luminaire Timing**
- **Updating Software**

DMX Operation

Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence. (There is only one DMX mode for this luminaire, which is Enhanced 16-bit Mode.)

Table 3-1: Enhanced 16-Bit Mode - VL1100 TI/AI Models

DMX Channel	Parameter	Range
1	Dimmer *	0-255
2	Hi Byte Pan	0-65535
3	Lo Byte Pan	0-65535
4	Hi Byte Tilt	0-65535
5	Lo Byte Tilt	0-65535
6	Edge	0-255
7	Zoom	0 (small) - 255 (big)
8	Diffusion	0 (open) - 255 (diffused)
9	Blue	0 (open) - 255 (full saturation)
10	Amber	0 (open) - 255 (full saturation)
11	Magenta	0 (open) - 255 (full saturation)
12	Rotating Gobo	0-127 index 128-255 rotate
13-14	Gobo Index	Index: 0-65535 Rotate: 0 (cw max) - 32535 (cw min) 32536-33031 (stop) 33032 (ccw min) - 65535 (ccw max)
15	Beam	0 (small) - 255 (open)
16	Focus Time	0-255
17	Color Time	0-255
18	Beam Time	0-255
19	Control	0-255

* Dimmer refers to either an external dimmer for VL1100 TI models or an internal dimmer for VL1100 AI models. Regardless, this channel must be included for both profiles.

Table 3-2: Enhanced 16-Bit Mode - VL1100 TS/AS Models

DMX Channel	Parameter	Range
1	Dimmer *	0-255
2	Hi Byte Pan	0-65535
3	Lo Byte Pan	0-65535
4	Hi Byte Tilt	0-65535
5	Lo Byte Tilt	0-65535
6	Edge	0-255
7	Zoom	0 (small) - 255 (big)
8	Diffusion	0 (open) - 255 (diffused)
9	Blue	0 (open) - 255 (full saturation)
10	Amber	0 (open) - 255 (full saturation)
11	Magenta	0 (open) - 255 (full saturation)
12	Rotating Gobo	0-127 index 128-255 rotate
13-14	Gobo Index (13 = Hi Byte) (14 = Lo Byte)	Index: 0-65535 Rotate: 0 (cw max) - 32535 (cw min) 32536-33031 (stop) 33032 (ccw min) - 65535 (ccw max)
15	Frame 1A	0 (open) - 255 (closed)
16	Frame 1B	0 (open) - 255 (closed)
17	Frame 2A	0 (open) - 255 (closed)
18	Frame 2B	0 (open) - 255 (closed)
19	Frame 3A	0 (open) - 255 (closed)
20	Frame 3B	0 (open) - 255 (closed)
21	Frame 4A	0 (open) - 255 (closed)
22	Frame 4B	0 (open) - 255 (closed)
23	Rotate Frame	0-255 128 center
24	Focus Time	0-255
25	Color Time	0-255
26	Beam Time	0-255
27	Control	0-255

* Dimmer refers to either an external dimmer for VL1100TS models or an internal dimmer for VL1100AS models. Regardless, this channel must be included for both profiles.

Control Channel Functions

Control channel functions allow special actions such as reset, lamp on/off and partial recalibration. These must be executed with zero time transition or with timing disabled. Discrete values must be used; not manual controls such as faders or encoders (see chart below for values).

Reset - resets all luminaire mechanisms.

Lamp On or Lamp Off - switches lamp on or off.

Partial Recalibration - resets only the target mechanism (color, gobo, zoom, etc.) without affecting others.

Table 3-3: Control Channel Functions

Control Channel Function	Control Channel Value		
	% Value	DMX Value	
		For 3 Secs or Greater	After 3 Secs
Luminaire Reset	32-33	81-87	0
Lamp Off	65-67	165-171	0
Lamp On	98-100	249-255	0
Partial Recalibration of:			
- Blue/Amber/Magenta/Diffuser *	40	100-104	0
- Rotating Gobo/Index *	45	113-117	0
- Edge/Zoom *	50	126-130	0
- Beam Size Iris/Shutter *	55	138-142	0

* For arc models, the dimmer will close during each recalibration action.

To use control channel functions:

Step 1. Select an action to be sent.

Step 2. Set control channel value for desired action (for example, 84 for reset). Hold value for 3 seconds.

Note: A numerical keypad is required for sending values. An encoder or fader does not allow for a quick value change, which is required to effect the control functions.

Step 3. Set control channel value to zero. (This must occur without any scaling values. Action will be voided if other values are detected between action value and zero.)

DMX Data Display

The DMX data display shows the data received for the given luminaire and does not show the entire stream of 512 bytes. It shows only the number of channels used for the given luminaire model in 16-bit enhanced mode.

For example, a VL1100 TS luminaire with an address of 40 will show DMX Channels 1-27 which would correlate to DMX Channels 40-66.

DMX Mapping

Color Mixing

The color mixing mechanism is a CYM subtractive color mixing system made up of a graduated color system for cyan, yellow, and magenta.

Table 3-4: DMX Map For Cyan

% Value	DMX Value	Action
0	0	Open
100	255	Closed or Full Saturation

Table 3-5: DMX Map For Yellow

% Value	DMX Value	Action
0	0	Open
100	255	Closed or Full Saturation

Table 3-6: DMX Map for Magenta

% Value	DMX Value	Action
0	0	Open
100	255	Closed or Full Saturation

Rotating Gobo Wheel

Note: Gobos are sold separately. Contact your Authorized VARI✻LITE® Dealer or visit the Vari-Lite web site, www.vari-lite.com, for available gobo patterns.

The function operates in two modes: INDEX Mode and ROTATE Mode. The DMX values corresponding to these modes are as follows:

- DMX values 0-127 will select each gobo in Indexing mode.
- DMX values 128-255 will select each gobo in Rotating mode.

Table 3-7: DMX Map For Gobo Index/Rotate

Position	Indexing	Rotating	Function
1	0	128	Open
2	18	146	Gobo 1
3	41	169	Gobo 2
4	63	191	Gobo 3
5	86	214	Gobo 4
6	108	236	Gobo 5

Index/Rotation

The Gobo Index function utilizes 16-bit control which offers enhanced resolution whether in INDEX or ROTATE mode.

Table 3-8: Index/Rotation Range

Function	Range
Index	0-65535
Rotate	0 (cw max) - 32535 (cw min) 32536-33031 (stop)

Shutter Mechanism

For units with a shutter mechanism, the shutter is comprised of four frame blades that move independently or in unison. The entire assembly operates in a smooth, time-continuous motion using stepper motors (two per frame blade and one to rotate the entire shutter mechanism). The shutter mechanism can rotate 45º in either direction and the frame blades can tilt +/- 35º.

Table 3-9: Shutter Mechanism DMX Map Chart (shutter models only)

Item	% Value	DMX Value	Action
Frame 1A to Frame 4B	0	0	Open
	100	255	Closed
Shut Rot *(Shutter Rotation)*	0	0	CCW
	50	128	Center
	100	255	CW

Luminaire Timing

Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. We provide three timing channels, one for Focus (Pan and Tilt), one for color parameters and one for beam parameters. Timing channels support time values of up to six minutes.

Table 3-10: Channel Function / Timing Channel Relationship

Channel Function	Timing Channel		
	Focus Time	Color Time	Beam Time
Pan (Hi Byte/Lo Byte)	♦		
Tilt (Hi Byte/Lo Byte)	♦		
Blue		♦	
Amber		♦	
Magenta		♦	
Color Wheel		♦	
Diffusion			♦
Beam			♦
Edge			♦
Zoom			♦
Rotating Gobo			♦
Gobo Index (HiByte/LoByte)			♦
Shutter (all 9 motors)			♦

A timing value of zero is full speed. A time value of 100% (or 255 in DMX) causes the associated parameter(s) to follow cue fade time (console time) rather than the timing channel.

Note: The particular storing syntax for your console, as well as instructions on how to write part cues, can be found in the operation manual for that console.

To use these channels, you must:

Step 1. Create the cue, including color, gobo, edge and diffusion as required.

Step 2. Decide which fixtures and which parameter groups will use timing channels.

Step 3. Assign a value to the particular timing channel(s) you wish to use (for timing information see chart on next page).

Step 4. Set console timing (or cue fade time) for parameters and timing channels to zero seconds.

Step 5. Store cue.

Note: Avoid changing timing channel values in a fading cue. This can cause unexpected behavior in the luminaire as the timing channel value is updated over time. Timing channel values and the final destination of the parameters affected by the timing channel should always be sent in a zero count.

Timing channels can be set in either % or 0-255 (DMX) modes, with the following values assigned:

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
	0	Full Speed
	1	0.2
	2	0.4
1	3	0.6
	4	0.8
2	5	1
	6	1.2
	7	1.4
3	8	1.6
	9	1.8
4	10	2
	11	2.2
	12	2.4
5	13	2.6
	14	2.8
6	15	3
	16	3.2
	17	3.4
7	18	3.6
	19	3.8
8	20	4
	21	4.2
	22	4.4
9	23	4.6
	24	4.8
10	25	5
	26	5.2
	27	5.4
11	28	5.6
	29	5.8
	30	6
12	31	6.2
	32	6.4
13	33	6.6

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
	34	6.8
	35	7.0
14	36	7.2
	37	7.4
15	38	7.6
	39	7.8
	40	8
16	41	8.2
	42	8.4
17	43	8.6
	44	8.8
	45	9
18	46	9.2
	47	9.4
19	48	9.6
	49	9.8
	50	10
20	51	10.2
	52	10.4
	53	10.6
21	54	11
	55	11
22	56	12
	57	12
	58	13
23	59	13
	60	14
24	61	14
	62	14
	63	15
25	64	15
	65	16
26	66	16
	67	16
	68	17
27	69	17
	70	18
28	71	18
	72	18
	73	19
29	74	19
	75	20

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
30	76	20
	77	20
	78	21
31	79	21
	80	21
	81	22
32	82	22
	83	23
33	84	23
	85	23
	86	24
34	87	24
	88	25
35	89	25
	90	25
	91	26
36	92	26
	93	27
37	94	27
	95	27
	96	28
38	97	28
	98	29
39	99	29
	100	29
	101	30
40	102	30
	103	30
	104	31
41	105	31
	106	32
42	107	32
	108	32
	109	33
43	110	33
	111	34
44	112	34
	113	34
	114	35
45	115	35
	116	36
46	117	36

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
	118	36
	119	37
47	120	37
	121	38
48	122	38
	123	38
	124	39
49	125	39
	126	39
	127	40
50	128	40
	129	41
51	130	41
	131	41
	132	42
52	133	42
	134	43
53	135	43
	136	43
	137	44
54	138	44
	139	45
55	140	45
	141	45
	142	46
56	143	46
	144	47
57	145	47
	146	47
	147	48
58	148	48
	149	49
59	150	49
	151	49
	152	50
60	153	50
	154	50
	155	51
61	156	51
	157	52
62	158	52
	159	52

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
	160	53
63	161	53
	162	54
64	163	54
	164	54
	165	55
65	166	55
	167	56
66	168	56
	169	56
	170	57
67	171	57
	172	58
68	173	58
	174	58
	175	59
69	176	59
	177	59
	178	60
70	179	60
	180	65
71	181	65
	182	65
	183	70
72	184	70
	185	75
73	186	75
	187	75
	188	80
74	189	80
	190	85
75	191	85
	192	85
	193	90
76	194	90
	195	95
77	196	95
	197	95
	198	100
78	199	100
	200	110
79	201	110

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
	202	110
	203	120
80	204	120
	205	120
81	206	130
	207	130
	208	140
82	209	140
	210	140
	211	150
83	212	150
	213	160
84	214	160
	215	160
	216	170
85	217	170
	218	180
86	219	180
	220	180
	221	190
87	222	190
	223	200
88	224	200
	225	200
	226	210
89	227	210
	228	210
	229	220
90	230	220
	231	230
91	232	230
	233	230
	234	240
92	235	240
	236	250
93	237	250
	238	250
	239	260
94	240	260
	241	270
95	242	270
	243	270

Table 3-11: VL1100 Timing Channels Map

% Value	DMX	= Seconds
	244	280
96	245	280
	246	290
97	247	290
	248	290
	249	300
98	250	300
	251	310
99	252	310
	253	310
	254	310
100	255	Follows Cue Data

Updating Software

USB Download and Programming Luminaires

You can upgrade Vari-Lite luminaire operating software using the USB Luminaire Programming Kit (Vari-Lite part number 28.8500.0054, sold separately) for desktop computers and newer laptops equipped with USB 2.0 ports. The USB Luminaire Programming Kit can be ordered directly from your Authorized VARI❋LITE® Dealer.

The VARI❋LITE® USB Luminaire Programming Kit (28.8500.0054) includes:

- VARI❋LITE® USB Upload Cable (25.9600.0001)
- USB Luminaire Programming Kit CD (87.8500.0002)
- Instruction Sheet (02.8500.0100)
- VARI❋LITE® carry bag (07.5044.0005)

Computer Requirements for the USB Luminaire Programming Kit

- PC running Windows® 98, 2000, XP, or Vista. Although the USB Luminaire Programming kit software is not directly compatible with Macintosh® computers, it does run with some Windows emulators.
- In addition to Windows, your computer must be running IE 5.01 or later, and Microsoft.NET Framework Version 3.5 (or later), which you can download from http://www.microsoft.com and search for .NET Framework downloads.
- An available USB 2.0 port on the PC.

USB VLDownloader PC Program and .bin Luminaire Files

The USB VLDownloader program and current .bin files are available from the Product Downloads page at www.vari-lite.com. Instructions for installing the USB VLDownloader program on your PC are also available on the Product Downloads page. Use the USB VLDownloader program to transfer updated versions of the luminaire operating software (.bin files) from your PC to the luminaires.

Note: Refer to instruction sheet 02.8500.0100 for detailed programming instructions for VARI❋LITE® luminaires.

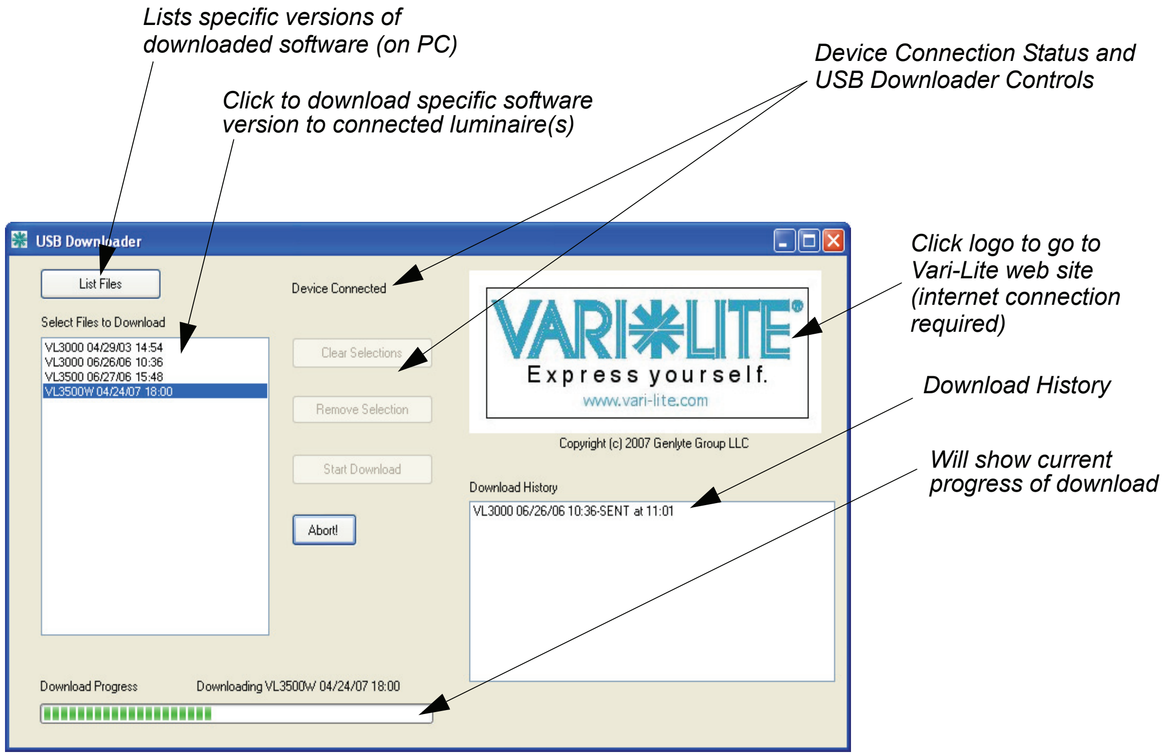


Figure 3-1: VL Download Program Window

Transferring Software From Luminaire to Luminaire

It is possible to transfer specific software versions between luminaires. As in the case of installing new software versions, multiple luminaires can be programmed at the same time when they are data linked together (refer to "Connecting Data and Power" on page 15), however, only a maximum of 32 luminaires can be updated at once.

Hardware Requirements

Data cables used in this process must have two twisted pairs and a shield. It is also recommended that cables meet all other USITT DMX specification requirements. Refer to "Data Cables" on page 9.

A termination connector is used in this process. Refer to page 10 for more information regarding the construction of this connector.

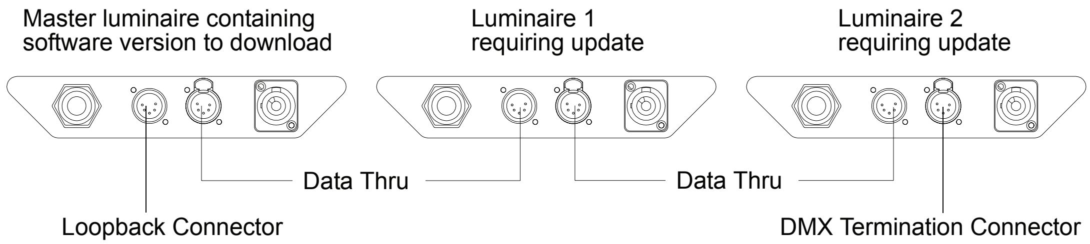


Figure 3-2: Software Transfer Setup

Transfer Procedure

This procedure is used to transfer software versions between luminaires.

Step 1. At last luminaire, install male termination connector into DATA THRU XLR connector.

Step 2. At master luminaire (first in chain) Menu Display, press [Menu].

Step 3. Press [Up] / [Down] arrows until Fixture appears.

Step 4. Press [Up] / [Down] arrows until Download appears. Press [Enter].

Step 5. OK? will be displayed. Press [Enter] to accept.

Step 6. Download proceeds. (Download takes 4-5 seconds.) The number of blocks displayed is less in a luminaire-to-luminaire download than in a PC-to-luminaire download for the same software version.

Step 7. When download is complete, luminaire automatically recalibrates. When recalibration is complete, luminaire is ready for operation with its new software version.

Verify software version at luminaire:

Step 1. At Menu Display, press [Menu].

Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Version appears. Press [Enter].

The first half of the version will be displayed as a date (MM.DD.YY). For example, 03.18.03 (March 18, 2003).

Press [Up] / [Down] arrows to display second half of version. This will be displayed as a time (HH:MM). For example, 16:00

Notes

CHAPTER 4.

Menu System

This chapter contains instructions for operating the luminaire using the Menu Display feature.

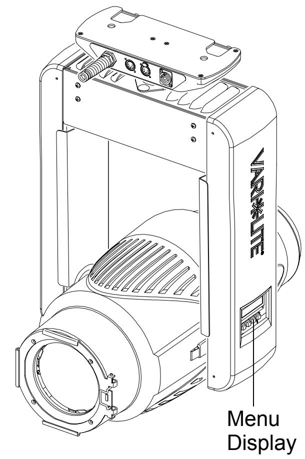
- **Menu Operation**
- **Menu Functions**
- **Self Tests**

Menu Operation

What Is the Menu System?

The menu system is a programmable set of commands used to configure, address, operate, and test the luminaire. The menu system is controlled at the Menu Display available at the yoke leg.

The menu system has seven main functions which are referred to as "1st level." Within these main functions, there can be up to four additional sub-functions (levels 2 thru 5), making five total levels.



Menu Controls Operation

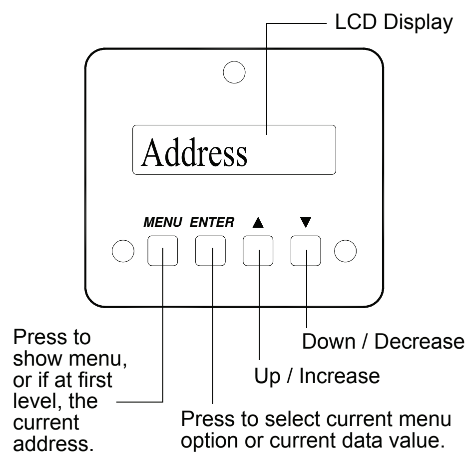
The menu system is controlled by four buttons. These buttons function as follows:

[Menu] button Displays the menu, or if at first level, the current address. Can also enable menu to exit a menu level.

[Enter] button Selects the current menu option or stores current data value.

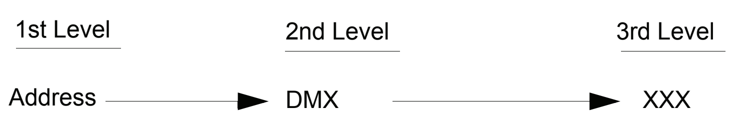
[Up] arrow Scrolls menu options upward or increases current data value.

[Down] arrow Scrolls menu options downward or decreases current data value.



To enter the menu system, first press [Menu]. The functions displayed will be 1st level functions. Scroll through the 1st level functions by pressing [Up] / [Down] arrows. Once the desired function appears in the display, press [Enter]. You are now at the 2nd level. Once again, press the [Up] / [Down] arrows to scroll through 2nd level functions. Press [Enter] to access 3rd level functions and so forth. When the highest level for the function is reached, [Up] / [Down] arrows can be pressed to select a value or select a toggle activation such as ON/OFF. Press [Enter] to store the value or select an action.

For example, the Address function has one sub-level: DMX. This 2nd level menu allow access to a 3rd level, which is a value. The Address function is a 3-level menu.



Menu Default State

The menu display's default state during normal operation is to display the address. After 10 seconds of inactivity at the display, it will change to this default state.

After 5 minutes of inactivity, the menu display will switch to its off state.

Menu Shortcuts

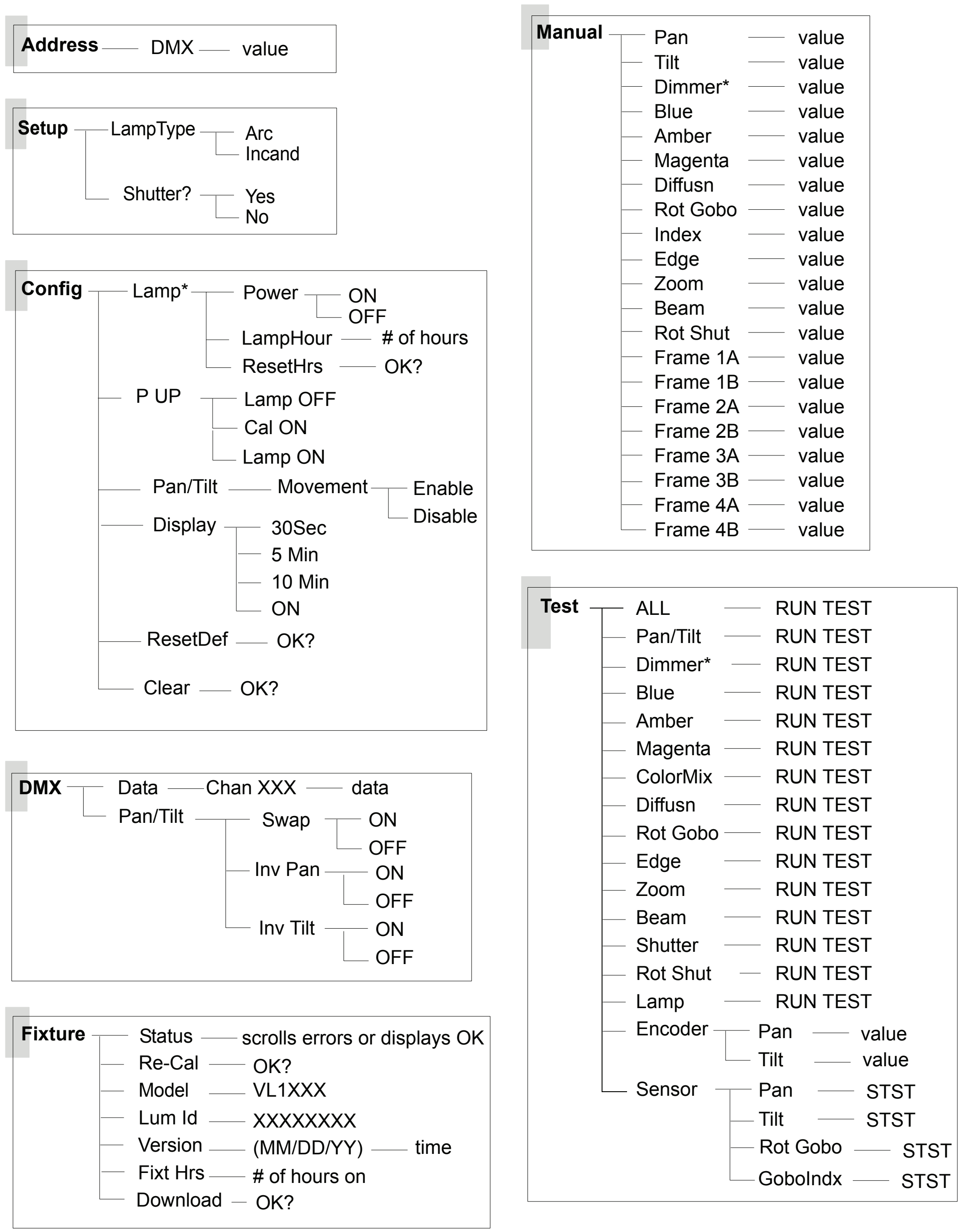
A few button combinations are provided as shortcuts for frequently used menu functions. These are as follows:

- Lamp On - Press and hold [Up], then press [Enter]. (Arc models only.)
- Lamp Off - Press and hold [Down], then press [Enter]. (Arc models only.)
- Recalibrate - Press and hold [Up], then press [Menu].
- Interrupt Calibration - Press [Menu] at Power up. (See "Program Starting Address Without Calibrating" on page 35 for more information.)

Menu Functions

Menu System Overview

The following is a graphic representation of the entire menu system.



** (arc only)*

Menu System Function Chart

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Address	**DMX** *DMX Address*	**XXX** *Address value*		
Setup	**LampType**	**Arc**		
		Incand		
	Shutter?	**Yes**		
		No		
Config *System Configuration*	**LAMP** *Lamp Options* (Arc Only)	**Power** *Lamp Power*	**ON** (default)	
			OFF	
		P UP *Lamp Power-up State*	**Lamp OFF** *Lamp Off*	
			Cal ON *Lamp On After Calibration*	
			Lamp ON *Lamp On* (default)	
		LampHour *Lamp Hours Used*	**XXXX** *Cumulative # of Operation Hours* (Not editable)	
		ResetHrs *Reset Lamp Hour and Lamp Strike Counters*	**OK?**	
	Pan/Tilt *Pan and Tilt Options*	**Movement** *Position Recovery*	**Enable** *Enable*	
			Disable *Disable*	
	Display *Display Illumination*	**30s** *OFF in 30 seconds*		
		5M *OFF in 5 minutes* (default)		
		10M *OFF in 10 minutes*		
		ON *ON indefinitely*		
	ResetDef *Reset Default Values*	**OK?**		
	Clear *Clear Stored Parameters and Re-Cal*	**OK?**		
DMX *DMX Mode and Data*	**DATA**	**Chan XXX** *DMX Channel*	**XXXX** *Data*	
	Pan/Tilt *Pan and Tilt Options*	**Swap** *Swap Pan & Tilt*	**ON**	
			OFF	
		InvP *Invert Pan*	**ON**	
			OFF	
		InvT *Invert Tilt*	**ON**	
			OFF	

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Fixture	**Status** *Status/Error Display*	*Scrolls error messages or displays* **OK**		
	Re-Cal *Recalibrate*	**OK?**		
	Model *Luminaire Model Type*	**VL1100XX** *Model Type*		
	Lum Id *Luminaire ID*	**XXXXXXXX** *Luminaire ID Number*		
	Version *Version*	**XX/XX/XX** *MM/DD/YY* (Page 1)	**XXX** *Time (in 6 min intervals)* (Page 2)	
	Fixt Hrs *Fixture Hours*	**XXXX #** *Hours On*		
	Download	**OK?**		
Manual *Manual Commands*	**Pan** *Pan*	**XXXX** *Data*		
	Tilt *Tilt*	**XXXX** *Data*		
	Dimmer *Dimmer (Arc Only)*	**XXX** *Data*		
	Blue *Blue*	**XXX** *Data*		
	Amber *Amber*	**XXX** *Data*		
	Magenta *Magenta*	**XXX** *Data*		
	Diffusn *Diffusion*	**XXX** *Data*		
	Rot Gobo *Rotating Gobo*	**XXX** *Data*		
	Index *Rotating Gobo Index*	**XXXX** *Data*		
	Edge *Edge*	**XXX** *Data*		
	Zoom *Zoom*	**XXX** *Data*		
	Beam *Beam-size Iris (If Beam-Size Iris Accessory)*	**XXX** *Data*		
	Rot Shut *Rotating Frame (Shutter) (If Shutter Accessory)*	**XXX** *Data*		
	Frame 1A *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 1B *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 2A *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 2B *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 3A *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 3B *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 4A *(If Shutter Accessory)*	**XXX** *Data*		
	Frame 4B *(If Shutter Accessory)*	**XXX** *Data*		

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Test *System Test*	**ALL** *Test All Motors*	**RUN TEST** *Run-Test in Progress*	Press [Menu] to stop tests	
	Pan/Tilt	**RUN TEST** *Run-Test in Progress*		
	Dimmer *(Arc Only)*	**RUN TEST** *Run-Test in Progress*		
	Blue	**RUN TEST** *Run-Test in Progress*		
	Amber	**RUN TEST** *Run-Test in Progress*		
	Magenta	**RUN TEST** *Run-Test in Progress*		
	ColorMix *Blue, Amber, Magenta test*	**RUN TEST** *Run-Test in Progress*		
	Diffusn *Diffusion Test*	**RUN TEST** *Run-Test in Progress*		
	Rot Gobo *Rotating Gobo Test*	**RUN TEST** *Run-Test in Progress*		
	Edge	**RUN TEST** *Run-Test in Progress*		
	Zoom	**RUN TEST** *Run-Test in Progress*		
	Beam *(If Beam-Size Iris Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Shutter *(If Shutter Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Rot Shut *(If Shutter Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Lamp *Disables Pan/Tilt and executes Home position.*	**RUN TEST** *Run-Test in Progress*		
	Encoder *Encoders*	**Pan** *Pan Encoder*	**XXXX** *Data*	
		Tilt *Tilt Encoder*	**XXXX** *Data*	
	Sensor *Sensors*	**Pan** *COT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		Tilt *COT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		Rot Gobo *Gobo Select EOT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		GoboIndx *Gobo Index EOT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**

Menu Function Definitions

For easy reference, each possible menu item is listed alphabetically in the first column by its display abbreviation. The second column follows with a definition of the abbreviation and then a third column provides an explanation of its purpose and function.

Display	Definition	Purpose
10 Min	10 Minutes	Sets Menu Display to automatically shut off after 10 minutes of non-use.
30 Sec	30 Seconds	Sets Menu Display to automatically shut off after 30 seconds of non-use.
5 Min	5 Minutes	Sets Menu Display to automatically shut off after 5 minutes of non-use.
Address	DMX Address	Accesses function for setting luminaire DMX starting address.
ALL	All Motors	Tests all internal motors.
Amber	Amber	Specifies Amber for manual control (**Manual**) or test Amber functions (**Test**).
Arc	Arc	Specifies luminaire as having an arc lamp source.
Blue	Blue	Specifies Blue for manual control (**Manual**) or tests Blue functions (**Test**).
Cal ON	Calibration On	Configures arc luminaire so that lamp will strike after calibration procedure is complete.
Chan XXX	DMX Channel	Specifies DMX channel for display of current data value.
Clear	Clear	Clears stored parameters and re-calibrates luminaire.
ColorMix	Color Mixer	Tests color mixing mechanism.
Config	System Configuration	Accesses functions for setting lamp, pan/tilt, and Menu Display options. Also accesses lamp information such as number of strikes, and hours used, along with their respective reset function.
Data	DMX Data	Accesses function for displaying DMX data by channel number.
Diffusn	Diffusion	Specifies manual control of Diffusion (**Manual**) or tests Diffusion functions (**Test**).
Dimmer	Dimmer	Specifies dimmer mechanism for manual control (**Manual**) or tests dimmer/ strobe functions (**Test**).
Disable	Disable	Disables a function.
Display	Display Illumination	Accesses options for Menu Display on and off times.
DMX	DMX	Sets starting address for DMX systems.
Edge	Edge Function	Specifies edge function for manual control (**Manual**) or for testing (**Test**).
Enable	Enable	Enables a function.
Encoder	Encoders	Accesses encoder choices for diagnostic testing.
FAIL	Test Fail	Indicates that sensor test has failed.
Fixt Hrs	Fixture Hours	Displays total number of hours luminaire has been powered on.
Fixture	Fixture	Access luminaire specification information such as model, serial number, software version, along with status information.
Frame 1A - Frame 4B	Frame Side	Specifies shutter frames 1A, 1B, 2A, 2B, 3A, 3B, 4A or 4B for manual control depending on which one is selected at the Manual Commands menu.
GoboIndx	Gobo Index	Specifies gobo index EOT sensor for testing.
Incand	Incandescent	Specifies luminaire as having an incandescent lamp source.
Index	Gobo Index	Specifies rotating gobo index for manual control.
Inv Pan	Invert Pan	Reverses pan action for special focus requirements.
Inv Tilt	Invert Tilt	Reverses tilt action for special focus requirements.

Display	Definition	Purpose
Lamp	Lamp	Accesses lamp power up options and information (**Config**).
Lamp OFF	Lamp is Off	Configures arc luminaire so that lamp will not strike upon power up.
Lamp ON	Lamp is On	Configures arc luminaire so that lamp will strike upon power up.
LampHour	Lamp Hours	Displays total number of lamp operating hours.
LampType	Lamp Type	Accesses menu item for configuring luminaire for arc or incandescent source.
Lum Id	Luminaire ID	Displays unique luminaire ID number.
Magenta	Magenta	Specifies manual control of Magenta (**Manual**) or test Magenta functions (**Test**).
Manual	Manual Commands	Accesses functions for controlling luminaire mechanisms and timing by entry of an absolute data value.
Model	Model	Displays model number of luminaire. For example, VL1100TS.
Movement	Movement	Enables and disables pan and tilt movement and auto-correction.
No	No	Specifies that the luminaire does not contain the shutter accessory.
OFF	Off	Turns off a function.
OK	Okay	Calibration has completed and no errors have occurred.
OK?	Okay?	Prompt for pressing [Enter] before an action is executed.
ON	On Indefinitely	Sets Menu Display to stay on until programmed otherwise (**Display**) or turns on a function.
Pan	Pan	Specifies pan function for manual control (**Manual**) or pan encoder for testing (**Test**).
Pan/Tilt	Pan/Tilt	Accesses pan and tilt options for DMX function, system configuration, and testing.
PASS	Test Pass	Indicates that sensor test has passed.
Power	Lamp Power	Accesses function to turn lamp on or off.
PROG	Programming	Currently programming the new version of software.
Re-Cal	Recalibrate	Currently executing calibration or recalibrates luminaire.
ResetDef	Reset Default	Resets default system configuration values.
ResetHrs	Reset Lamp Info	Resets lamp hour and lamp strike counters. For use when new lamp is installed.
Rot Gobo	Rotating Gobo	Specifies rotating gobo for manual control (**Manual**) or gobo select EOT sensor for testing (**Test**).
Rot Shut	Rotating Shutter	Specifies shutter mechanism rotating function for manual control (**Manual**) or for testing (**Test**).
RUN TEST	Run-Test	Indicates that a system mechanism test is in progress.
Sensor	Sensors	Accesses sensor choices for diagnostic testing.
Setup	Setup	Accesses lamp type and shutter operation settings.
Shutter	Shutter	Specifies shutter mechanism for testing.
Shutter?	Shutter	Accesses menu item for configuring luminaire for shutter operation.
Status	Status/Error Display	Allows scrolling through error list or displays **OK** if no errors.
STST	Sensor Test	Indicates that a system sensor test is in progress.
Test	System Tests	Accesses diagnostic tests for internal mechanisms.
Tilt	Tilt	Specifies tilt function for manual control (**Manual**) or tilt encoder for testing (**Test**).
Version	Version	Displays current software version (Date and Time in two pages).
Yes	Yes	Specifies that the luminaire contains the shutter accessory.
Zoom	Zoom Function	Specifies zoom function for manual control (**Manual**) or for testing (**Test**).

Self Tests

Running Parameter Tests

The luminaire is capable of running self tests by using the TEST menu functions.

Note: If a DMX data stream is present on the luminaire's DMX input connector, Self Test and Manual control is overwritten by the DMX command protocol and neither (Self Test and Manual) will operate.

When running tests on multiple luminaires, a loopback connector is required at the master luminaire (first in link) and a male termination connector is required at the last luminaire in the link. Refer to page 20 for more information regarding the construction of these connectors.

Note: After 10 seconds of inactivity, the menu display will change to the default state showing the address.

To connect luminaires for simultaneous testing:

Step 1. At first luminaire in link, install loopback connector into DATA IN XLR connector.

Step 2. At last luminaire, install DMX termination connector into DATA THRU XLR connector.

Step 3. At master luminaire Menu Display, press [Menu].

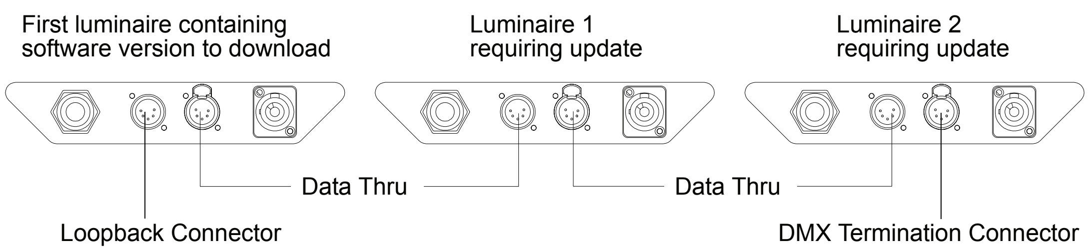


Figure 4-1: Hardware Setup

To run tests:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Test appears. Press [Enter].

Step 3. Use [Up] / [Down] arrows to select a parameter to test. Refer to "Menu System Function Chart" on page 61 for a complete list of test parameters which can be chosen.

Step 4. Press [Enter] to run test.

Step 5. Press [Menu] to stop test at any time.

Movement Disable

The Movement option allows pan and tilt to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, Movement will need to be enabled after testing.

Note: When using the Movement option, pan and tilt will be disabled for all the luminaires that are linked.

To set movement option:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Config appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Pan/Tilt appears. Press [Enter].

Step 4. Movement will be displayed. Press [Enter].

Step 5. Use [Up] / [Down] arrows to select Enable or Disable. Press [Enter] to select.

Notes

APPENDIX A.

Troubleshooting and Maintenance

This appendix provides instructions for troubleshooting and performing routine maintenance which may be necessary during the life of the luminaire.

- **Troubleshooting**
- **Routine Maintenance**

WARNING: All routine maintenance procedures are to be performed with power completely removed from the luminaire. Never remove protective covers when luminaire is powered. Wear appropriate protective eye wear and gloves when servicing the fixture. All service and maintenance, other than described herein should be performed by an Authorized VARI❋LITE® Dealer or Service Center.

WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.

Troubleshooting

Error Messages

If a problem occurs during luminaire calibration, at the end of the calibration sequence the Menu Display will cycle through any applicable error message(s) until the end of the list is reached. To review the error messages again, it will be necessary to access them using the Status function.

To access error messages:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].

Step 3. Press [Up]/ [Down] arrows to access Status. Press [Enter]. (Display will now scroll through any error messages or display OK if no errors.)

Table A-1: Error Messages

Display	Message...
OK	No Errors Found
Pan/No Sens	Pan sensor not found.
Pan/Encoder/Fail	Pan encoder failure.
Tilt/No Sens	Tilt sensor not found.
Tilt/Encoder/Fail	Tilt encoder failure.
Index/No Sens	Gobo Index sensor not found.
Rot Gobo/No Sens	Rotating Gobo sensor not found.
Lamp/Strike/Fail	Lamp strike failure.

Troubleshooting Guide

If a problem is suspected, first try recalibrating the luminaire to prompt an error message. The chart below provides possible causes and remedies for various error messages and/or symptoms.

CAUTION: Some troubleshooting is included for reference only. Performing remedies marked by gray areas will void product warranty. Refer to the Vari-Lite Limited Warranty card included with the product.

Table A-2: Troubleshooting Guide

Error Display	Description	Possible Cause and Remedy
Pan/No Sens	Pan Sensor Not Found	EOT flag attached to large pulley is not engaging the EOT sensor - Ensure flag is attached to the large pulley - Ensure that flag passes through the sensor at a depth sufficient to engage the sensor beam Pan belt disconnected, extremely loose or not installed properly - Properly install belt between pan motor and large pulley
Pan/Encoder/Fail	Pan Encoder Failure	Main board pan/tilt connector (J9) disconnected - Connect main board pan/tilt connector (J9) Pan motor disconnected - Connect pan motor power
		Encoder faulty - Replace pan end-of-travel/encoder sensor assembly
TILT NO SENS	Tilt Sensor Not Found	EOT flag attached to large pulley is not engaging the EOT sensor - Ensure flag is attached to the large pulley - Ensure that flag passes through the sensor at a depth sufficient to engage the sensor beam Tilt belt disconnected, extremely loose or not installed properly - Properly install belt between tilt motor and large pulley
Tilt/Encoder/Fail	Tilt Encoder Failure	Main board pan/tilt connector (J9) disconnected - Connect main board pan/tilt connector (J9) Tilt motor disconnected - Connect tilt motor power
		Encoder faulty - Replace pan end-of-travel/encoder sensor assembly
Lamp/Strike/Fail	Lamp Strike Failure	Lamp failed to strike after repeated attempts - Replace lamp

Routine Maintenance

Cleaning Optical Lenses and Gobos

WARNING: Remove power from luminaire before performing maintenance.

The front lens and gobos may require cleaning after extended use. Use only isopropyl alcohol, along with a soft, lint-free cloth to clean glass components.

To access gobos, refer to procedure below.

Rotating Gobo Replacement

WARNING: Remove power from luminaire before performing maintenance. Gobos may be HOT after operation. Allow to cool before replacing.

WARNING: Users of VARI✻LITE® luminaires should not install or use metal gobos. The use of metal gobos in any VARI✻LITE® product may damage the luminaire and could void the luminaire's warranty.

METAL GOBOS

To replace a rotating gobo:

Step 1. Remove power from luminaire.

Step 2. At either side of head assembly, press in front cover latch and pull cover straight back until stopped by tether.

Step 3. Rotate gobo wheel until required gobo position is accessible at finger access cutout.

Step 4. Rotate gobo gear until open end of carrier is upward.

CAUTION: Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. Clean with isopropyl alcohol and soft, lint-free cloth if required.

CAUTION: Do not pull metal spring clip carrier back too far or it will not close properly.

Step 5. If applicable, carefully pull current gobo up and out of carrier. *Gobo can be easily scratched on sides of carrier if not careful.*

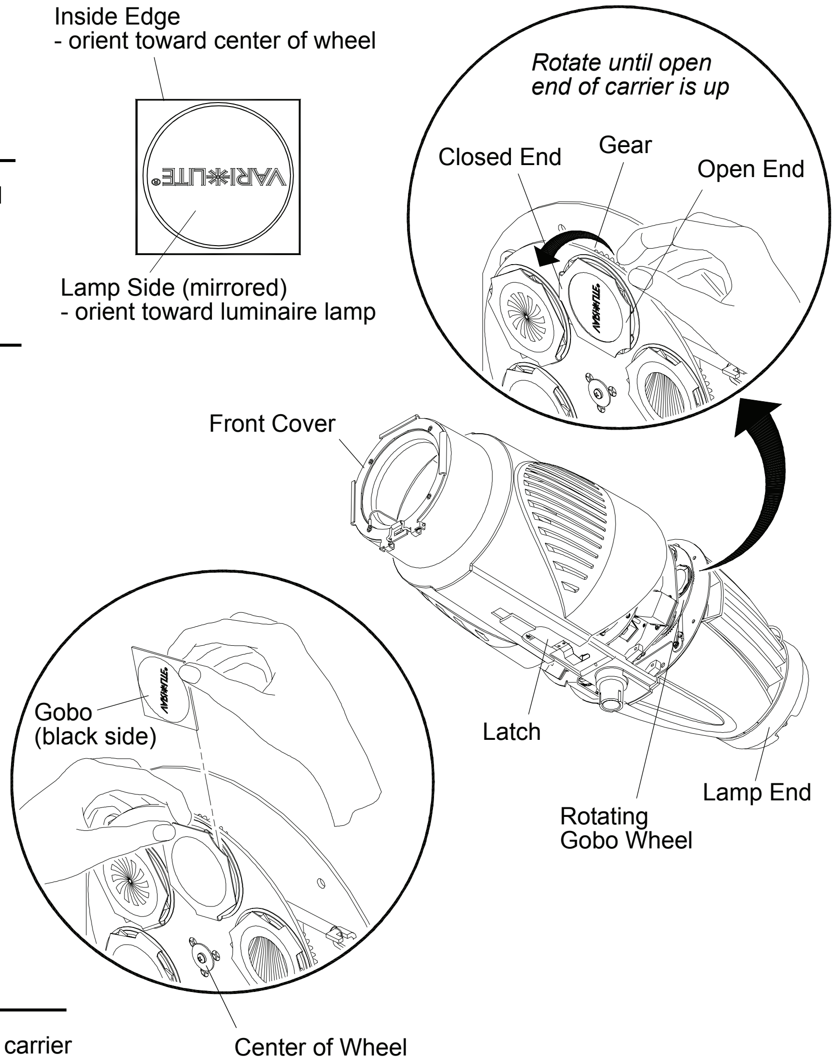
Step 6. Carefully install new gobo, orienting side marked "This Edge In" toward center of gobo wheel and side marked "Lamp Side" (mirror finish) toward lamp. *Gobo can be easily scratched on sides of carrier if not careful.* Ensure gobo is firmly set in carrier grooves.

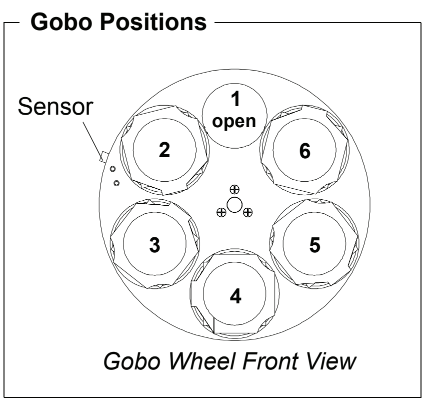
Step 7. Re-install front cover.

CAUTION:

Gobo MUST be oriented with the mirrored side towards the luminaire's lamp. If not oriented properly, gobo will break.

Be careful not to scratch gobo on side of carrier when installing.





CAUTION:

Be careful not to pull metal spring clip carrier back too far or it will not close properly.

Figure A-1: Rotating Gobo Replacement/Cleaning

Lamp Replacement

For lamp replacement procedure, refer to "Installation Procedures" on page 21.

APPENDIX B.

Technical Specifications

Mechanical

Zoom Optics

Continuously variable field angle in imaging range from 19° to 36°, super zoom of field to 70° programmable over a timed range of 2 seconds to 20 minutes.

Color Mixing

Fully crossfading CYM color system.

Diffusion

Field or gobo can be continuously and smoothly diffused to wash.

Rotating Gobo Wheel

Six-position rotating gobo wheel with five rotatable, indexable gobo positions and one open gobo position. Note, does not include gobos (gobos are sold separately).

Shutter (Only on "S" Framing Models)

Four-blade system can frame and crop beam field and gobos. Each blade can translate across 85% of field and rotate up to +/- 35°. Entire shutter rotates +/- 45°.

Beam Size Iris (Only on "I" Iris Models)

In addition to the zoom optics, a mechanical iris provides continuous beam size control for both rapid and smooth-timed beam angle changes.

Pan and Tilt

Smooth, time-continuous motion using 3-phase stepper motors with encoder correction. High frequency drivers to reduce stationary noise when luminaire is in parked position. Pan range is 540°, Tilt range is 270°. 0.1° resolution.

Optical

Source (Incandescent Models)

1000W Tungsten Halogen Lamp. Color Temp: 3200K, Output: 10,000 Lumens.

Source (Arc Models)

575W Arc Lamp. Color Temp: 5600K, CRI: 95, Output: 15,000 Lumens.

Reflector

Precision glass reflector with dichroic cold mirror coating.

Operational

Power Requirements

Depending on voltage, 1 to 2 Amps are supplied to Incandescent models through standard AC distribution while 3 to 9 Amps are supplied to Arc luminaires and ballast.

Operational Temperature

-20° to 122°F (-29° to 50°C)

Cooling

Free convention cooling when hung. Shutter models and floor mounting units activate a low noise, forced-air cooling system.

Control

Compatible with a wide variety of DMX512 consoles.

Mounting Position

All models can be mounted and operated in any orientation.

Weight

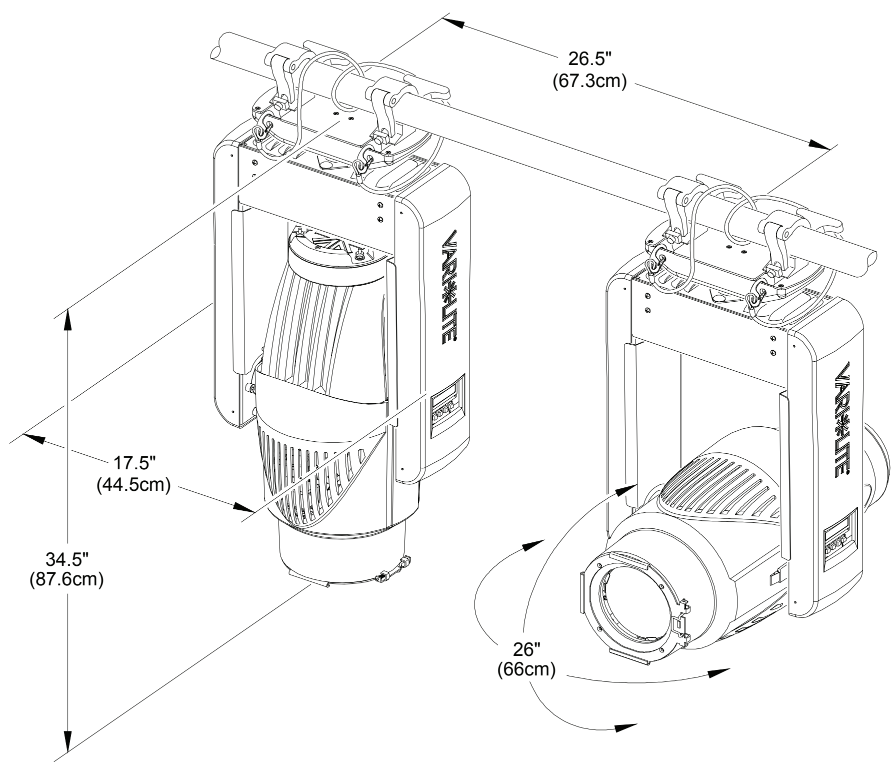
Tungsten Version (without dimmer): 70 lbs (32 kg)

Tungsten Version (with optional dimmer): 72 lbs (32.65 kg)

Arc Version: 70 lbs (32 kg) / Arc Unit Only: 16.6 lbs (7.52 kg)

Spacing

Hangs on 26.5 in. (67.3 cm) centers.



Photometric

VL1100™ ERS Luminaire - Incandescent Models with 1000W Tungsten Halogen Lamp

(All data taken with a seasoned light source at 20 hours of life.)

FIELD ANGLE (degrees)	FIELD DIAMETER TN*	BEAM ANGLE (degrees)	BEAM DIAMETER TN*	CANDELA (cd)
19.0	.335	13.0	0.228	218,000
26.0	.462	19.5	0.344	105,600
36.0	.650	25.5	0.453	58,000
70.0 (Super Zoom)	1.40	29.0	0.517	28,640

* Multiply throw distance by Tn to determine coverage.

To calculate Illuminance (I) at a specific distance (D): $I = \frac{cd}{D^2}$

VL1100™ ERS Luminaire - Arc Models with 575W Metal Halide Lamp

(All data taken with a seasoned light source at 20 hours of life.)

FIELD ANGLE (degrees)	FIELD DIAMETER TN*	BEAM ANGLE (degrees)	BEAM DIAMETER TN*	CANDELA (cd)
19.0	.335	13.0	0.228	383,000
26.0	.462	19.5	0.344	185,500
36.0	.650	25.5	0.453	101,900
70.0 (Super Zoom)	1.40	29.0	0.517	50,300

* Multiply throw distance by Tn to determine coverage.

To calculate Illuminance (I) at a specific distance (D): $I = \frac{cd}{D^2}$

Arc Ballast Unit (VL1100 Arc Models Only)

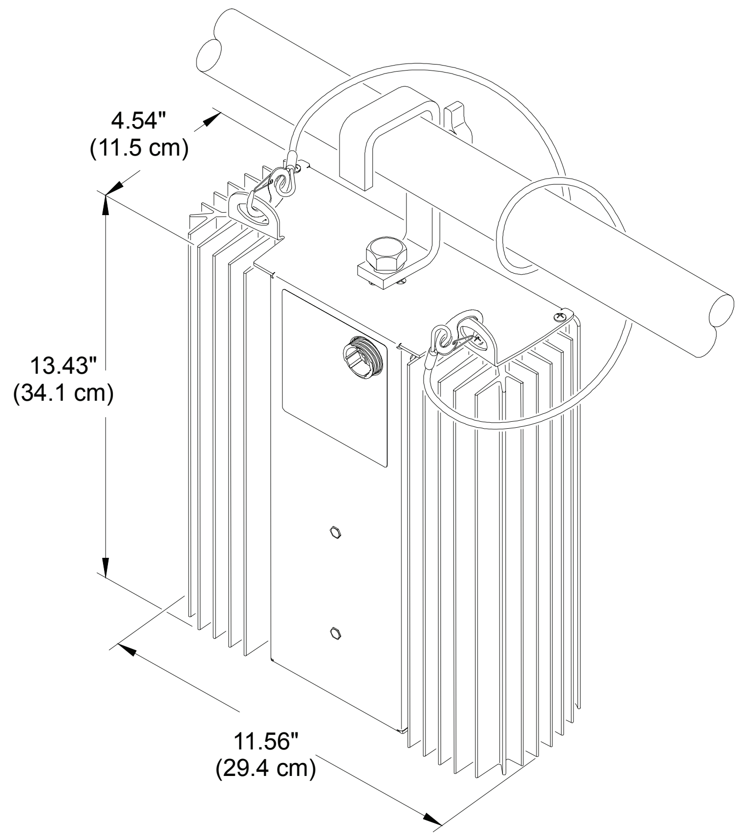
Input

Voltage Range
90V to 275V, auto-ranging.

Frequency
50 Hz or 60 Hz

Current Range
2.7 A to 9.0 A*

Power Factor
+/- 0.97



Output

Open Circuit Voltage
+/- 450V

Lamp Voltage
100V*

Lamp Current
6.25 A*

Lamp Power
625 W*

Output Current Shape
Square wave

Output Frequency
200 Hz*

High Frequency Ripple Current
+/- 3%

* Nominal Values

Weight and Dimensions

Mounting Position
Ballast can be mounted in any orientation.

Weight
16.6 lbs (7.52 kg)

VARI*LITE®
Express yourself.

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